June 6, 2001.

MEMORANDUM

SUBJECT: **Oxyfluorfen.** List B Reregistration Case 2490. Chemical No. 111601. **Revised Product and Residue Chemistry Chapters for the Reregistration Eligibility Document.** DP Barcode: D275399.

FROM: José J. Morales, Chemist
Reregistration Branch 3
Health Effects Division (7509C)

THROUGH: Catherine Eiden, Branch Senior Scientist
Reregistration Branch 3
Health Effects Division (7509C)

TO: Felicia Fort
Reregistration Branch 1
Health Effects Division (7509C)
and
Deanna Scher, Chemical Review Manager
Special Review and Reregistration Division (7508C)

Attached are the revised Product and Residue Chemistry Chapters for the Oxyfluorfen RED. The chapters were assembled by Dynamac Corporation under the supervision of RRB 3, HED. The data assessment has undergone secondary review in the branch and has been revised to reflect Agency policies.

OXYFLUORFEN
PC Code 111601; Case 2490

Reregistration Eligibility Decision:
Update to the Product Chemistry Chapter

April 18, 2001

Contract No. 68-W-99-053

Submitted to:
U.S. Environmental Protection Agency
Arlington, VA

Submitted by:
Dynamac Corporation
The Dynamac Building
2275 Research Boulevard
Rockville, MD 20850-3268

OXYFLUORFEN

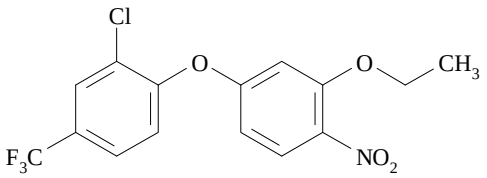
REREGISTRATION ELIGIBILITY DECISION:

UPDATE TO THE PRODUCT CHEMISTRY CHAPTER

PC Code 111601; Case 2490

DESCRIPTION OF CHEMICAL

Oxyfluorfen [2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene] is a pre- and postemergence herbicide registered for use on a variety of field crops, vegetables, and fruit trees.



Empirical Formula:	$C_{15}H_{11}ClF_3NO_4$
Molecular Weight:	361.72
CAS Registry No.:	42874-03-3
PC Code:	111601

IDENTIFICATION OF ACTIVE INGREDIENT

Oxyfluorfen is an orange to deep red brown crystalline solid with a melting point of 65-84 °C, density of 1.49 g/mL, octanol/water partition coefficient of >20, and vapor pressure of <1.0 mm Hg at 25° C. Oxyfluorfen is practically insoluble in water (0.1 ppm), but is readily soluble in most organic solvents.

MANUFACTURING-USE PRODUCTS

According to a search of the Reference Files System (REFS) conducted 2/01/01, there are two registered manufacturing-use products (MPs) under PC Code 111601, the Rohm and Haas Company 99% technical (T; EPA Reg. No. 707-165) and the Agan Chemical Manufacturing, Ltd. 97.4% T (EPA Reg. No. 11603-29). We note that the Rohm and Haas technical registration was amended November 1999 to increase the oxyfluorfen content from 70% to 99%. Only the Rohm and Haas and the Agan T/TGAIs are subject to a reregistration eligibility decision.

REGULATORY BACKGROUND

The Oxyfluorfen Phase 4 Review dated 3/22/91 by S. Funk determined that the available data for the Rohm and Haas 70% T met the acceptance criteria for Phase 5 review except that additional data were required concerning OPPTS 830.1800 (Enforcement Analytical Method) and 830.6313 (Stability to Normal and Elevated Temperature, Metals, and Metal Ions). The Product Chemistry Chapter for the Oxyfluorfen RED document was initially completed by HED 9/26/96 (DP Barcodes D226225 and D228704, C. Eiden). The present document is an update to the initial Product Chemistry Chapter and includes additional findings from recent submissions. This updated Product Chemistry Chapter to the Oxyfluorfen RED summarizes the product chemistry assessments with respect to the reregistration of oxyfluorfen.

Subsequent to issuance of the initial Product Chemistry Chapter, the Rohm and Haas technical registration was amended (11/99) from a 70% to a 99% formulation as the result of a new manufacturing process; new product chemistry data were submitted and evaluated in support of the amendment. The Agan 97.4% T was also registered subsequent (10/99) to the initial Product Chemistry Chapter as a "me-too" registration. The "me-too" registration for the Agan product was granted based on a "snapshot" decision by the Technical Review Branch (TRB; RD memorandum dated 10/13/99) that the Rohm and Haas 70% T and the Agan technical were similar in toxicity, even though the Product Chemistry Team of the TRB had previously determined (DP Barcode D252069 (amendment), 5/13/99, S. Mathur) that the two products were not substantially similar because they differed by more than 25% in certified limits. It was noted by the TRB that the Agan data would be comprehensively reviewed during the reregistration process for oxyfluorfen in FY 2000. Since Agan has submitted product chemistry data in support of the 97.4% T (DP Barcode D252069, 2/9/99, S. Mathur) and in consideration of the amendment of the label claim for the Rohm and Haas product to 99%, there are no outstanding issues remaining concerning registration of the 97.4% T with respect to product chemistry requirements.

Data were previously reviewed concerning the potential for formation of dibenzo-p-dioxins and dibenzofurans. Based on the manufacturing process and the composition of the starting materials, the formation of chlorinated dioxins is not expected in oxyfluorfen (CBRS No. 6085, 2/23/90, S. Funk).

The current status of the product chemistry data requirements for the oxyfluorfen technical products is presented in the attached data summary tables.

CONCLUSIONS

All pertinent product chemistry data requirements are fulfilled for the Rohm and Haas 99% and Agan 97.4% T/TGAIs. Therefore, HED has no objections to the reregistration of oxyfluorfen with respect to product chemistry data requirements.

Case No. 2490
Chemical No. 111601

Case Name: Oxyfluorfen
Registrant: Rohm and Haas Company
Product(s): 99% T (EPA Reg. No. 707-165)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product identity and composition	Y	44828901, CSF 11/17/99
830.1600	Description of materials used to produce the product	Y	44828901
830.1620	Description of production process	Y	44828901
830.1670	Discussion of formation of impurities	Y	44828901
830.1700	Preliminary analysis	Y	44828901
830.1750	Certified limits	Y	44828901, CSF 11/17/99
830.1800	Enforcement analytical method	Y	44828901
830.6302	Color	Y	44828902
830.6303	Physical state	Y	44828902
830.6304	Odor	Y	44828902
830.6313	Stability	Y	44828902
830.7000	pH	N/A [3]	44828902
830.7050	UV/visible absorption	Y	44828902
830.7200	Melting point/melting range	Y	44828902
830.7220	Boiling point/boiling range	N/A [4]	
830.7300	Density/relative density/bulk density	Y	44828902
830.7370	Dissociation constant	N/A [5]	
830.7550	Partition coefficient (n-octanol/water), shake flask method	Y	44828902
830.7840	Solubility	Y	44828902
830.7950	Vapor pressure	Y	44828902

[1] Y = Yes; N = No; N/A = Not Applicable. The Rohm and Haas technical registration was amended (11/99) from a 70% to a 99% formulation. New data were submitted to support the amended registration; these data supercede all previously submitted product chemistry data.

[2] All references were reviewed by the Registration Division (RD Letter dated 11/18/99, J. Miller, RD, to R. Larkin of Rohm and Haas) for the amended registration to the 99% T.

[3] These data are not required because the T/TGAI is practically insoluble in water.

[4] Data are not required because the T/TGAI is a solid at room temperature.

[5] These data are not required because the molecular structure of oxyfluorfen indicates that dissociation will not occur.

Case No. 2490
Chemical No. 111601

Case Name: Oxyfluorfen
Registrant: Agan Chemical Manufacturing, Ltd.
Product(s): 97.4% T (EPA Reg. No. 11603-29)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product identity and composition	Y	44720201, CSF 12/4/98
830.1600	Description of materials used to produce the product	Y	44720201
830.1620	Description of production process	Y	44720201
830.1670	Discussion of formation of impurities	Y	44720201
830.1700	Preliminary analysis	Y	44712001, 44712002
830.1750	Certified limits	Y	44712001, 44712002, CSF 12/4/98
830.1800	Enforcement analytical method	Y	44712001, 44712002
830.6302	Color	Y	44712003
830.6303	Physical state	Y	44712003
830.6304	Odor	Y	44712003
830.6313	Stability	Y	44712008
830.7000	pH	Y	44712003
830.7050	UV/visible absorption	Y	44828902 [3]
830.7200	Melting point/melting range	Y	44712003
830.7220	Boiling point/boiling range	N/A [4]	
830.7300	Density/relative density/bulk density	Y	44712003
830.7370	Dissociation constant	N/A [5]	
830.7550	Partition coefficient (n-octanol/water), shake flask method	Y	44712007
830.7840	Solubility	Y	44712004, 44712005
830.7950	Vapor pressure	Y	44712006

[1] Y = Yes; N = No; N/A = Not Applicable. The Agan 97.4% T was registered as a "me-too" registration, and is supported by product chemistry data submitted by Agan. Rohm and Haas authorized EPA to reference all pertinent generic oxyfluorfen data on file as necessary to support registration of the product (Letter dated 9/8/2000, R. Gaughan, Rohm and Haas, to J. Miller, EPA).

[2] All references were reviewed by the Registration Division (RD Memorandum, D252069, 2/9/99, S. Mathur); unless otherwise noted.

[3] Data submitted for the Rohm and Haas PAI will satisfy data requirements for the Agan technical product; RD Letter dated 11/18/99, J. Miller to R. Larkin of Rohm and Haas.

[4] Data are not required because the T/TGAI is a solid at room temperature.

[5] These data are not required because the molecular structure of oxyfluorfen indicates that dissociation will not occur.

AGENCY MEMORANDA CITED IN THIS DOCUMENT

CBRS No: 6085
Subject: Product Chemistry Data Review for Technical Oxyfluorfen to Determine the Potential for Halogenated Dibenzo-p-Dioxin/Dibenzofuran Formation.
From: S. Funk
To: E. Feris
Dated: 2/23/90
MRID(s): 40478001

CBRS No.: 17193 and 17453
DP Barcode: D226225 and D228704
Subject: Oxyfluorfen. List B Reregistration Case 2490. Chemical No. 111601. Product and Residue Chemistry Chapters for the Reregistration Eligibility Decision.
From: C. Eiden
To: P. Deschamp
Dated: 9/26/96
MRID: None

DP Barcode: RD Memorandum D252069
Subject: Product Chemistry Review of TGAI; Reg./File Symbol No.: 11603-EO; Product Name: Galigan (Oxyfluorfen) Technical; Company: Agan MFG, Ltd.
From: S. Mathur
To: J. Miller
Dated: 2/9/99
MRID: 44712001-44712009 and 44720201

DP Barcode: RD Memorandum D252069 (Amendment)
Subject: Product Chemistry Review of TGAI; Reg./File Symbol No.: 11603-EO; Product Name: Galigan (Oxyfluorfen) Technical; Company: Agan MFG, Ltd.
From: S. Mathur
To: J. Miller
Dated: 5/13/99
MRID: None

DP Barcode: None
Subject: Comparison of Rohm & Haas's 70% Oxyfluorfen (GOAL Technical Herbicide) to Makhteshim-Agan's 97% Oxyfluorfen (Galigan, EPA Reg. No. 11603-EO). PC Code 111601.
From: J. Redden, B. Backus, and D. McCall
To: D. Stubbs
Dated: 10/13/99
MRID: None

DP Barcode: RD Letter
Subject: GOAL® Technical Herbicide EPA Registration No. 707-165; Application and Letter Dated November 17, 1999, Request to Amend Registration by Increasing the Content of Oxyfluorfen from 72 to 99% and To Add the Alternate Brand Name: GOAL® Technical Purified Herbicide, by Notification.
From: J. Miller
To: R. Larkin, Rohm and Haas Company
Dated: 11/18/99
MRID: 44828901 and 44828902

PRODUCT CHEMISTRY CITATIONS

Bibliographic citations include only MRIDs containing data which fulfill data requirements.

References (cited):

44712001 Wells, D. (1997) Galigan - Characterization of the Pure Active Ingredient (AI): Final Report: Lab Project Number: 97-1-6852: 11742.0896.6108.210. Unpublished study prepared by Springborn Laboratories, Inc. 61 p.

44712002 Guzikevich, G. (1996) Analysis of 5 Lots of Oxyfluorfen Technical: Lab Project Number: 96-08: 9000849B. Unpublished study prepared by Agan Chemical Manufacturers Ltd. 120 p.

44712003 Wells, D. (1997) Galigan TGAI - Determining the Product Chemistry: Final Report: Lab Project Number: 97.1.6831: 11742.0896.6109.885. Unpublished study prepared by Springborn Laboratories, Inc. 66 p.

44712004 Harley, D. (1997) Galigan TGAI - Determination of Solubility in Water and Six Organic Solvents: Final Report: Lab Project Number: 97.1.6861: 11742.0896.6110.700. Unpublished study prepared by Springborn Laboratories, Inc. 51 p.

44712005 Wells, D. (1998) Galigan (Oxyfluorfen) TGAI - Determination of Water Solubility: Final Report: Lab Project Number: 98.4.7297: 11742.0997.6137.702. Unpublished study prepared by Springborn Laboratories, Inc. 33 p.

44712006 Wells, D. (1997) Galigan (Oxyfluorfen) TGAI - Determination of Vapor Pressure Using a Gas Saturation Method: Final Report: Lab Project Number: 97.1.6853: 11742.0896.6111.740. Unpublished study prepared by Springborn Laboratories, Inc. 57 p.

44712007 Hartley, D. (1997) Oxyfluorfen (Galigan PAI) - Determination of the n-Octanol/Water Partition Coefficient: Final Report: Lab Project Number: 97.1.6856: 11742.0896.6112.705. Unpublished study prepared by Springborn Laboratories, Inc. 42 p.

44712008 Wells, D. (1997) Galigan TGAI - Determination of Stability: Final Report: Lab Project Number: 97.1.6837: 11742.0896. 6113.863. Unpublished study prepared by Springborn Laboratories, Inc. 43 p.

44712009 Wells, D. (1998) Galigan (Oxyfluorfen) TGAI - Determination of the Storage Stability Under Controlled Conditions: Final Report: Lab Project Number: 97.1.6862: 11742.0986.6114.865. Unpublished study prepared by Springborn Laboratories, Inc. 50 p.

44720201 Guzikevich, G. (1997) Oxyfluorfen Technical - Product Properties: Lab Project Number: 97-05. Unpublished study prepared by Agan Chemical Manufacturers, LTD. 156 p.

44828901 Crawford, J. (1999) Product Chemistry Series 830 Group A: Product Identity, Composition, and Analysis for Goal High Purity Technical Active Ingredient: Lab Project Number: APR-99-060: 13-99-013TR. Unpublished study prepared by Lancaster Laboratories. 425 p.

44828902 Crawford, J. (1999) Product Chemistry Series 830 Group B: Physical and Chemical Characteristics of Goal High Purity Technical Active Ingredient: Lab Project Number: APR-99-061:RAS 133/992443: 18862P. Unpublished study prepared by Huntingdon Life Sciences Ltd. 447 p.

OXYFLUORFEN
PC Code 111601; Case 2490

Reregistration Eligibility Decision:
Update to the Residue Chemistry Chapter

April 18, 2001

Contract No. 68-W-99-053

Submitted to:
U.S. Environmental Protection Agency
Arlington, VA

Submitted by:
Dynamac Corporation
The Dynamac Building
2275 Research Boulevard
Rockville, MD 20850-3268

OXYFLUORFEN

REREGISTRATION ELIGIBILITY DECISION:

UPDATE TO THE RESIDUE CHEMISTRY CHAPTER

PC Code 111601; Case 2490

(DP Barcode D275399)

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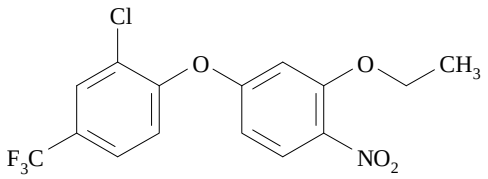

REREGISTRATION ELIGIBILITY DECISION:

UPDATE TO RESIDUE CHEMISTRY CHAPTER

PC Code 111601; Case 2490

(DP Barcode D275399)

INTRODUCTION

Oxyfluorfen [2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene] is a pre- and postemergence herbicide registered for use on a variety of field crops, vegetables, and fruit trees. Oxyfluorfen is sold in the United States by its basic producer, Rohm and Haas Company, under the trade name Goal®. The 1.6 or 2 lb/gal emulsifiable concentrate (EC) is the only oxyfluorfen formulation class registered for food/feed use. This formulation class may be applied to food/feed crops as a directed spray or broadcast application during dormant or vegetative growth stages using ground or aerial equipment.

REGULATORY BACKGROUND

HED completed the Oxyfluorfen Phase 4 Review on 3/22/91. An Oxyfluorfen Data-Call-In (DCI) Notice was subsequently issued on 6/12/91. HED identified residue chemistry studies for oxyfluorfen that were generated by Craven Laboratories, and a DCI Notice was issued on 7/20/93 requesting end-use producer(s) of oxyfluorfen to conduct new field trials to replace residue data supplied by Craven Laboratories. Several residue chemistry studies have been submitted and reviewed in response to the Oxyfluorfen DCI Notices.

The Residue Chemistry Chapter for the Oxyfluorfen RED document was initially completed by HED (DP Barcodes D226225 and D228704, 9/26/96, C. Eiden). The present document is an Update to the initial Residue Chemistry Chapter and includes additional findings from recent study submissions as well as HED review for consistency with Agency policies. It summarizes the residue chemistry assessments with respect to the reregistration of oxyfluorfen.

Tolerances for residues of oxyfluorfen in/on plant and animal commodities [40 CFR §180.381] were previously expressed in terms of the combined residues of oxyfluorfen and its metabolites containing the diphenyl ether linkage. The tolerance expression, however, was amended (60 FR 62330, 12/6/95) to delete the metabolites containing the diphenyl ether linkage; and is now expressed in terms of oxyfluorfen *per se*. The Agency has determined that it is no longer necessary to regulate the oxyfluorfen metabolites containing the diphenyl ether linkage because these compounds were not identified in plants, and oxyfluorfen *per se* was the major residue found in meat, meat byproducts, fat, milk, and eggs. All animal commodity tolerances are established at 0.05 ppm, while plant commodity tolerances range from 0.05 ppm to 0.1 ppm. An adequate method is available for the enforcement of tolerances as currently defined. No Codex MRLs have been established for oxyfluorfen.

The Agency has updated the list of raw agricultural and processed commodities and feedstuffs derived from crops (Table 1, OPPTS 860.1000). As a result of changes to Table 1, additional oxyfluorfen residue data are now required for some commodities; these data requirements have been incorporated into this document. These new data requirements will be imposed at the issuance of the Oxyfluorfen RED but should not impinge on the reregistration eligibility decisions for oxyfluorfen. The need for additional tolerances and for revisions to dietary exposure/risk assessments will be determined upon receipt of the required residue chemistry data.

SUMMARY OF SCIENCE FINDINGS

GLN 860.1200: Directions for Use

A REFS search, conducted 5/2/01, identified three oxyfluorfen end-use products (EPs) registered to Rohm and Haas Company. These EPs as well as all active SLN registrations are listed below.

Oxyfluorfen EPs with Food/Feed Uses Registered to Rohm & Haas Company

EPA Reg. No.	Label Acceptance Date	Formulation	Product Name
707-145 [3]	2/22/93	2 lb/gal EC	Goal® 2E Herbicide
707-174 [1]	11/22/95	1.6 lb/gal EC	Goal® 1.6E Herbicide
707-243 [2]	11/18/99	2 lb/gal EC	Goal® 2XL Herbicide

[1] Including SLN Nos.AR94000600, AZ83001300, AZ93001900, AZ95000800, CA83006000, CA83006500, CA83008900, CA85005100, CA88003400, CA89000900, CA89001200, CA92000400, CA92001800, CA92002900, CA93001400, CA95000700, CA95000800, GA89000600, HI84000600, HI87000300, HI90000500, ID86001500, IN84000300, LA88000600, LA93001100, MI84000300, MI84001100, MI89000800, MI89000900, MN94000100, MS94000100, MT93000400, NC83002300, NC85000400, NC88000400, NC91000300, ND93000200, NV93000200, OR85002100, OR90001600, OR91002600, OR96000500, OR96000600, PA96000100, SC88000400, SC91000200, SC94000200, SD94000100, SD94000300, TX96000400, VA93001000, WA85002300, WA91001200, WA96000500, WI84000200, WI88000200, WI88000300, WI95000100.

[2] Including SLN Nos.AR96000900, AZ00000100, AZ96001100, AZ96001200, CA96001900, CA96002000, CA96002100, CA96002200, CA96002300, CA96002600, CA96002800, CA97001400, CA97002600, HI96001000, HI99000200, IN96000400, LA96001200, MI97000200, MN96000600, MS00001000, MS96001500, MT96000300, NC96000500, NC96000600, NC99000700, ND96000500, ND98000100, NV99000700, OR00000100, OR00002800, OR96003600, OR96003700, OR97000800, OR99000600, OR99003600, PA96000500, SC00000200, SC96000800, SC97000100, SD01000200, SD96000600, SD96000700, WA96003300, WA96003400, WA97001300, WA97002300, WA97002400, WA99003500, WI96000900, WY98000100.

[3] Including SLN Nos. AZ83001200, CA82005200, CA83005900, IA81001100, IN81001800, IN82000800, MI81002200, MI83000400, NC81002100, NC83000800, NE81001700.

Label amendments are required to support uses of oxyfluorfen on fallow beds. Details of the required label amendments are presented in the respective endnote for GLN 860.1200 (Directions for Use) of Table B.

A comprehensive summary of the registered food/feed use patterns of oxyfluorfen, based on the product labels registered to Rohm and Haas Company and all active SLN registrations, is presented in Table A. A tabular summary of the residue chemistry science assessments for reregistration of oxyfluorfen is presented in Table B. The status of reregistration requirements for each guideline topic listed in Table B is based on the use patterns registered by the basic producer and also on the residue data submitted by IR-4 in support of minor crop uses. When end-use product DCIs are developed (e.g., at issuance of the RED), RD should require that all end-use product labels (e.g., MAI labels, SLNs, and products subject to the generic data exemption) be amended such that they are consistent with the basic producer labels.

GLN 860.1300: Nature of the Residue - Plant

The reregistration requirements for plant metabolism are fulfilled. The qualitative nature of the residue in plants is adequately understood based on acceptable metabolism studies conducted on tomatoes (a fruiting vegetable), onions (a bulb vegetable), and peaches (a stone fruit). The terminal residue of concern is oxyfluorfen *per se*.

GLN 860.1300: Nature of the Residue - Animals

The reregistration requirements for livestock metabolism are fulfilled. The qualitative nature of the residue in livestock is adequately understood based on acceptable ruminant and poultry metabolism studies. These studies indicate that the parent compound, oxyfluorfen, is the compound of toxicological concern in milk, eggs, and livestock tissues.

GLN 860.1340: Residue Analytical Methods - Plants and Animals

The Pesticide Analytical Manual (PAM) Vol. II lists two GLC/electron capture detector (ECD) methods, designated as Methods I and II, for the enforcement of tolerances for oxyfluorfen residues in/on plant and animal commodities, respectively. Both methods determine levels of oxyfluorfen and its reduced metabolites by a common moiety (as heptafluorobutyryl derivatives of oxyfluorfen). Because oxyfluorfen *per se* is now the residue of concern, the PAM Vol. II methods are no longer suitable for enforcement purposes.

HED recommends that FDA's Multiresidue Methods for oxyfluorfen *per se* be utilized as the primary enforcement method for plant commodities until the registrant submits a proposed enforcement method for plants to determine oxyfluorfen *per se*. An enforcement method for the determination of oxyfluorfen *per se* in animal commodities is required as FDA's Multiresidue Methods are not suitable for animal commodities.

New single analyte methods are being proposed for determination of residues of oxyfluorfen *per se* for enforcement and data collection purposes. In conjunction with a pending tolerance petition (PP#3F4229/FAP#3H5674) on peanut, Rohm and Haas proposes a GC/ECD method (Method TR 34-94-150, renamed as Method TR-34-95-111) including a confirmatory GC/MS method for the enforcement of oxyfluorfen tolerances on plant commodities. The stated limits of quantitation (LOQ) and detection (LOD) for Method TR-34-95-111 are 0.01 ppm and 0.003 ppm, respectively, except on peanut vine, shell, and hay for which the reported LOQ and LOD are 0.02 ppm and 0.007 ppm, respectively. Method TR 34-95-111 was adequately validated by the registrant using a wide array of plant matrices and by an independent laboratory using peanut nutmeat. The method will be forwarded to ACB

for a petition method validation trial to ensure that the procedures are appropriate for tolerance enforcement.

Also in conjunction with PP#3F4229/FAP#3H5674, Rohm and Haas, proposes a GC/ECD method (Method TR 34-95-110) including a confirmatory GC/MS method for the enforcement of oxyfluorfen tolerances on animal commodities. The stated LOQ and LOD for Method TR-34-95-110 are 0.01 ppm and 0.003 ppm, respectively, for all animal commodities. Method TR 34-95-110 was adequately validated by the registrant using a variety of animal matrices and by an independent laboratory using milk and chicken fat. The method was also successfully radiovalidated using aged samples from the hen and goat metabolism studies. HED will forward Method TR 34-95-110 to ACB for a petition method validation trial.

GLN 860.1360: Multiresidue Methods

The 10/99 FDA PESTDATA database (PAM Volume I, Appendix I) indicates that oxyfluorfen *per se* is completely recovered (>80%) using Multiresidue Method Sections 302 (Luke Method; Protocol D), 303 (Mills, Onley, Gaither; Protocol E - nonfatty foods), and 304 (Mills; Protocol E - fatty foods).

GLN 860.1380: Storage Stability Data

Adequate storage stability data are available to validate the storage intervals and conditions of various samples collected from studies pertaining to magnitude of the residue in/on plants and animals. These storage stability data have been taken into consideration during the reassessment of established tolerances. No additional storage stability data are required for purposes of reregistration.

Fortified residues of oxyfluorfen *per se* were demonstrated to be stable under frozen storage conditions for at least 3 years in/on a variety of plant commodities including: almonds (hulls and nutmeats), artichokes, avocado, banana, broccoli, cabbage, cauliflower, corn, cottonseed, figs, dates, grapes, guava, horseradish, kiwi, mint hay, olives, onions, persimmons, pistachios, pome fruits, pomegranates, soybeans, stone fruits, and tree nuts. Fortified residues of oxyfluorfen *per se* were also shown to be stable for at least -10 months in/on raspberries and blackberries. The results of storage stability studies conducted on these commodities can be translated to all crops for which residue trial data exist.

Fortified residues of oxyfluorfen *per se* were demonstrated to be stable under frozen storage conditions for up to 14 months in cow muscle and liver, and for up to 12 months in milk and eggs.

GLN 860.1500: Crop Field Trials

The reregistration requirements for data depicting magnitude of the residue in/on plants are fulfilled for the following raw agricultural commodities (RACs): artichokes; avocados; blackberries; broccoli; cabbage; cauliflower; chickpea (garbanzo beans); coffee; corn, field, fodder; corn, field, forage; corn, field, grain; cottonseed; dates; feijoa; figs; garlic; grapes; guavas; horseradish; kiwifruits; mint, tops; olives; onions, dry bulb; papayas; pome fruits; persimmons; pistachios; pomegranates; raspberries; soybean seed; stone fruits; strawberries; taro corm; taro foliage; and tree nuts. The available field trial data for these RACs have been reevaluated for purposes of tolerance reassessment. Overall, acceptable field trials reflecting the maximum registered use patterns and conditions under which the pesticide could be applied were conducted. The geographic representation for each commodity is generally adequate, and a sufficient number of trials reflecting representative EC formulation class was conducted.

Additional data and/or label revisions are required for bananas, cacao beans, soybean forage, and soybean hay. Details of the required label amendments and/or field residue data for these RACs are presented in the appropriate crop section of Table B.

As a result of changes in Table 1 (OPPTS 860.1000), the Agency currently recognizes aspirated grain fractions and cotton gin byproducts (commonly called gin trash) as RACs. HED has determined that residue data and a tolerance for aspirated grain fractions are not required for reregistration; this conclusion may be changed if oxyfluorfen uses on wheat and sorghum are additionally registered in the future. With respect to cotton gin byproducts, residue data are required and an appropriate tolerance should be proposed once acceptable data have been submitted and evaluated.

It is generally the Agency's policy to require residue field data and establish tolerances for field corn fodder and forage. However, because of the limited registered use of oxyfluorfen on field corn, residue chemistry data requirements for field corn fodder and forage should not be imposed; it is noted that the treated forage and fodder of field corn are not fed to livestock to avoid the spread of "witchweed" (DP Barcode D171996, 4/16/92, F. Fort).

Pending required label amendments, the reregistration requirements for magnitude of the residue in fallow beds are fulfilled based on the aggregate results of the existing confined rotational crop study along with the residue field trials conducted for apple, artichokes, avocado, cherries, corn, figs, horseradish, kiwifruits, olives, onions, pomegranates, and soybeans. Data from these field trials indicated nondetectable

residues of oxyfluorfen (<0.01 ppm) in/on the RACs following application(s) of a representative EC formulation according to the maximum registered use patterns.

Adequate residue data are available to support the time-limited tolerance of 0.05 ppm for strawberries under a Section 18 emergency exemption.

The majority of oxyfluorfen tolerances for plant commodities are established at 0.05 ppm. Most of the Craven replacement residue data indicate that residues of oxyfluorfen *per se* in/on many crop commodities are <0.01 ppm (nondetectable) and suggest that tolerances could be lowered. However, because of concerns regarding setting a tolerance level at the LOQ of the data-collection method, the possibility of an occasional residue of oxyfluorfen >0.01 ppm, and the registrant's intention to propose a new single analyte enforcement method (GC/ECD method designated as Method TR-34-95-111) for oxyfluorfen with a quantitation limit of 0.02 ppm, the Agency recommends for maintaining the existing tolerances at 0.05 ppm (DP Barcode D225680, 6/18/96, C. Eiden). HED may reassess tolerances again pending the outcome of the requested Agency petition method validation for Method TR-34-95-111.

Brief summaries of available oxyfluorfen residue data, useful for tolerance reassessment only, along with the status of requirements for RACs eligible for reregistration, are presented below.

Root and Tuber Vegetables Group

Horseradish

Adequate residue data are available for horseradish. IR-4 data (MRID 43973701) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on horseradish roots harvested at maturity (141 to 144 days) following a single preemergence broadcast application of the 1.6 lb/gal EC formulation at 0.5 lb ai/A (1x the maximum single application rate). Based on these data, the established tolerance for horseradish is reassessed at its existing level of 0.05 ppm.

Taro corm

Adequate residue data are available for taro corm. Residue data (MRID 40940301) reported in petition review PP#9E3716 (5/4/89, M. Nelson) indicate that residues of oxyfluorfen were <0.02 ppm (nondetectable) in/on taro leaves and corms harvested 186-187 days (approximately 6 months) following the last of two applications of the 1.6 lb/gal EC formulation at 0.25, 0.5, or 1.0 lb ai/A/application (0.5x, 1x, or 2x the maximum single and seasonal rates, respectively). The first application was made as a broadcast treatment one week after transplanting, and the second as a directed spray approximately three months later. Based on these data, the

established tolerance with regional registration for taro (corms and leaves) is reassessed at its existing level of 0.05 ppm.

Leaves of Root and Tuber Vegetables Group

Taro foliage

Adequate residue data are available for taro foliage. These data were submitted in conjunction with the taro corm data; details of the study are presented above in the "Root and Tuber Vegetables" section.

Bulb Vegetables Group

Garlic

No additional residue data for garlic are required. Registered use patterns for garlic are supported by adequate residue data for dry bulb onion (MRID 43965501). In accordance with 40 CFR §180.1, a separate tolerance for garlic is not needed because the established tolerance for dry bulb onions will apply to garlic. This conclusion differs from the previous RED Chapter where HED recommended the registrant to "propose a tolerance for garlic supported by residue data for onions (dry bulb)".

Onion, dry bulb

Adequate residue data are available for dry bulb onions. The reviewed Craven replacement data (MRID 43965501) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of dry bulb onions harvested 45-54 days following the last of two postemergence broadcast spray applications of the 1.6 lb/gal EC formulation at 0.5 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for dry bulb onion is reassessed at its existing level of 0.05 ppm.

Brassica Leafy Vegetables Group

Broccoli

No additional residue data for broccoli are required. The available Craven replacement data for cabbage (MRID 43986301) and cauliflower (MRID 43986302) will be translated to broccoli since the registered uses of oxyfluorfen on these Brassica leafy vegetables are identical. Based on data translated from cabbage and

cauliflower, the established tolerance for broccoli is reassessed at its existing level of 0.05 ppm.

Cabbage

Adequate residue data are available for cabbage. The reviewed Craven replacement data (MRID 43986301) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of cabbage with and without wrapper leaves harvested at maturity following a single pre-transplant broadcast application to the soil of the 1.6 lb/gal EC formulation at 0.5 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for cabbage is reassessed at its existing level of 0.05 ppm.

Cauliflower

Adequate residue data are available for cauliflower. The reviewed Craven replacement data (MRID 43986302) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of cauliflower heads harvested at maturity (number of days unspecified) following a single pre-transplant broadcast application to the soil of the 1.6 lb/gal EC formulation at 1x the maximum registered rate. Based on these data, the established tolerance for cauliflower is reassessed at its existing level of 0.05 ppm.

Legume Vegetables (Succulent or Dried) Group

Chickpea (garbanzo bean)

Adequate residue data are available for garbanzo beans. Residue data (MRID 41622701) reported in petition PP#0E3908 (3/21/91, M. Nelson) indicate that residues of oxyfluorfen were <0.02 ppm (nondetectable) in/on samples of garbanzo beans harvested 119 days following a single preemergence application of the 1.6 lb/gal EC formulation at 0.125, 0.25, or 0.5 lb ai/A (0.5x, 1x, or 2x the maximum single rate, respectively). In another study, (PP#8F2058; 2/13/79, R. Perfetti), residues were <0.01-0.02 ppm in/on soybeans harvested 118-165 days following a single preemergence application of an unspecified formulation at 0.12-1.75 lb ai/A. Based on these data (using the soybean data to augment the garbanzo bean data), the established tolerance with regional registration for garbanzo beans is reassessed at its existing level of 0.05 ppm.

Soybean seed and aspirated grain fractions

Adequate residue data are available for soybean seed. The Oxyfluorfen Phase 4 Review reported that analysis of >200 samples of treated soybean seeds showed only 10 samples with residues $0.01 ppm ranging from 0.01 to 0.02 ppm (MRIDs

00125632, 000136873, 92136053, and 92136086). Field trial data, submitted in conjunction with a soybean processing study (MRID 43764901), indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on soybean seed samples harvested 136 days following a single preemergence application of the 1.6 lb/gal EC formulation at 0.5 or 2.5 lb ai/A (1x or 5x the maximum preemergence application rate, respectively).

As a result of changes in Table 1 (OPPTS 860.1000), the Agency currently recognizes aspirated grain fractions as a RAC. According to current Agency guidance policies, a tolerance for aspirated grain fractions for a pesticide should be established based on the use of the pesticide on corn, wheat, sorghum, and soybeans. Oxyfluorfen is presently registered for use on corn and soybeans only (see Table A). Following examination of the registered uses of oxyfluorfen on corn and soybeans as well as re-evaluation of the available field residue data for corn grain and soybean seed, HED believes that residue chemistry data requirements for aspirated grain fractions should not be imposed for purposes of reregistration because of the following reasons: (i) the registered use of oxyfluorfen on field corn is limited to the states of NC and SC in conjunction with a USDA program to eradicate "witchweed" (*Striga asiatica*); these states represent <2% of the 1991 U.S. field corn grain production *(1992 USDA Agricultural Statistics)*; and (ii) the available residue data for corn grain and soybean seed, from trials conducted at the maximum registered use patterns, suggest that the majority of residues were nondetectable (<0.01 ppm).

Foliage of Legume Vegetables Group

Soybean forage and hay

Residue data and tolerances for soybean forage and hay will not be required provided labels are amended to include product label restrictions on the feeding and grazing by livestock animals on soybean forage and hay. Alternatively, the registrant may elect to submit residue data and propose tolerances for these soybean commodities.

Pome Fruits Group

Adequate residue data, reflecting the maximum registered use pattern of oxyfluorfen on apples and pears, the representative commodities of the pome fruits crop group, are available. Based on these data, the established tolerance for the pome fruits group is reassessed at its existing level of 0.05 ppm.

Apple

The reviewed Craven replacement data (MRID 43794001) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of apples harvested 155-

197 days following a single directed spray application of the 1.6 lb/gal EC formulation at 2.0 lb ai/A (1x the maximum single and seasonal rates).

Pear

The reviewed Craven replacement data (MRID 44575901) indicate that residues of oxyfluorfen *per se* were less that the LOD (<0.003 ppm) in/on pears harvested 127 days following a single dormant application of the 1.6 lb/gal EC formulation at 2.0 lb ai/A (1x the maximum single and seasonal rates).

Stone Fruits Group

Adequate residue data, reflecting the maximum registered use pattern of oxyfluorfen on cherries, peaches, and plums, the representative commodities of the stone fruits crop group, are available. Based on these data, the established tolerance for the stone fruits group is reassessed at its existing level of 0.05 ppm.

Cherry

The reviewed Craven replacement data (MRID 43794008) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on cherries harvested 100 days following a single directed spray application of the 1.6 lb/gal EC formulation at 2.0 lb ai/A (1x the maximum single and seasonal rates).

Peach

The reviewed Craven replacement data (MRID 44025401) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of peaches harvested 90 or 134 days following a single dormant application of the 1.6 lb/gal EC formulation at 2.0 lb ai/A (1x the maximum single and seasonal rates).

Plum

The plum field trials (MRIDs 00036708, 00079475, 00110745, 00146340, 92136054, and 92136087) reported in the Oxyfluorfen Phase 4 Review indicate that analysis of 26 treated plum samples showed only 3 samples with residues of oxyfluorfen at 0.01 ppm; residues in the remaining 23 samples were <0.01 ppm (nondetectable).

Berries Group

Blackberries

Adequate residue data are available for blackberries. Data (MRID 43424201) submitted by IR-4 indicate that residues of oxyfluorfen were <0.05 ppm (nondetectable) in/on samples of blackberries harvested 14 or 37 days following the last of five or six applications of a representative EC formulation at 2.0 lb ai/A/application for a total rate of 10 or 12 lb ai/A (5x and 6x the maximum seasonal rate, respectively). Based on these data (exaggerated rates and nonquantifiable residues), the established tolerance with regional registration for blackberries is reassessed at its existing level of 0.05 ppm.

Raspberries

Adequate residue data are available for raspberries. Data (MRID 43424202) submitted by IR-4 indicate that residues of oxyfluorfen were <0.05 ppm (nondetectable) in/on samples of raspberries harvested 51 or 63 days following the last of two applications of a representative EC formulation at 2.0 lb ai/A/application for a total rate of 4.0 lb ai/A (3.3x the maximum seasonal rate). Data (MRID 43424203) from an additional raspberry field trial indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on raspberries harvested 42 days following the last of two applications of an EC formulation at 1.0 or 2.0 lb ai/A/application for a total rate of 2.0 or 4.0 lb ai/A (1.7 or 3.3x the maximum seasonal rate, respectively). Based on these data (exaggerated rates and nonquantifiable residues), the established tolerance with regional registration for raspberries is reassessed at its existing level of 0.05 ppm.

Tree Nuts Group (except Almond Hulls)

Adequate non-Craven residue data, reflecting the maximum registered dormant use pattern of oxyfluorfen on almonds, pecans, and walnuts are available to support the established oxyfluorfen tolerance for the tree nuts group. Adequate residue data are also available to support non-dormant uses of oxyfluorfen on macadamia nuts grown in HI. Based on these data, the established tolerance for tree nuts group is reassessed at its existing level of 0.05 ppm.

The Oxyfluorfen Phase 4 Review (MRIDs 00071290-00071293 and 00110745) reported that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on all nutmeat samples, with the exception of three samples, harvested from 0 to 287 days following one or two applications of the 1.6 or 2.0 lb/gal EC formulation at 1.0-8.0 lb ai/A (0.5x-4x the maximum registered single and seasonal rates). Three nutmeat samples bore oxyfluorfen residues above the method's limit of quantitation (0.01 ppm): 0.02 ppm in pecan (4.0 lb ai/A, 7-day PHI); 0.02 ppm in almond (4.0 lb ai/A, 287-day PHI); and 0.02 ppm in almond (1.0 lb ai/A, 271-day PHI).

Residue data for macadamia nuts, re-summarized by the Agency (DP Barcode D167778, 10/10/91, S. Funk) from PP#4F3119 and PP#7E3519, indicate that residues of oxyfluorfen were <0.05 ppm (nondetectable) in/on samples of macadamia nuts harvested 0, 7, 14, and 28 days following application of the 1.6 lb/gal EC formulation made during the active growing stage at 4.0 lb ai/A (1x the maximum seasonal rate).

Almond hulls

The Oxyfluorfen Phase 4 Review (MRIDs 00071290-00071293 and 00110745) reported that residues of oxyfluorfen ranged from <0.01 ppm (nondetectable) to 0.09 ppm in/on samples of almond hulls harvested from 0 to 287 days following one or two applications of the 1.6 or 2.0 lb/gal EC formulation at 1.0-8.0 lb ai/A (0.5x-4x the maximum registered single and seasonal rates). Based on these data, the established tolerance for almond hulls is reassessed at its existing level of 0.1 ppm.

Cereal Grains Group

Corn, field, grain and aspirated grain fractions

Field trial data, submitted in conjunction with a field corn processing study (MRID 43944801), indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of field corn grain harvested 60 days following the last of two applications of the 1.6 lb/gal EC formulation at 1.25 and 31.25 lb ai/A (1x or 25x the maximum application rate, respectively). Based on these data (exaggerated rates and nonquantifiable residues), the established tolerance for corn grain is reassessed at its existing level of 0.05 ppm. Also, the submitted product labels were amended to reflect a 60-day PHI for field corn.

As a result of changes in Table 1 (OPPTS 860.1000), the Agency currently recognizes aspirated grain fractions as a RAC. According to the current guidance, a tolerance for aspirated grain fractions for a pesticide should be established based on the use of the pesticide on corn, wheat, sorghum, and soybeans. Oxyfluorfen is presently registered for use on corn and soybeans only (see Table A). Following examination of the registered uses of oxyfluorfen on corn and soybeans as well as reevaluation of the available field residue data for corn grain and soybean seed, HED believes that residue chemistry data requirements for aspirated grain fractions should not be imposed for purposes of reregistration because of the following reasons: (i) the registered use of oxyfluorfen on field corn is limited to the states of NC and SC in conjunction with a USDA program to eradicate "witchweed" (*Striga asiatica*); these states represent <2% of the 1991 U.S. field corn grain production *(1992 USDA Agricultural Statistics)*; and (ii) the available residue data for corn grain and soybean seed, from trials conducted at the maximum registered use patterns, suggest that the majority of residues were nondetectable (<0.01 ppm).

Forage, Fodder, Hay, and Straw of Cereal Grains Group

Corn, field, forage, and fodder

It is generally the Agency's policy to require residue field data and establish tolerances for field corn fodder and forage. However, because of the limited registered use of oxyfluorfen on field corn, residue chemistry data requirements for field corn fodder and forage should not be imposed; the treated forage and fodder of field corn are not fed to livestock to avoid the spread of "witchweed" (DP Barcode D171996, 4/16/92, F. Fort).

Miscellaneous Commodities

Artichoke, globe

Adequate residue data are available for artichokes. The reviewed Craven replacement data (MRID 43794007) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of artichokes harvested 5 days following a single directed spray application of the 1.6 lb/gal EC formulation at 2.0 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for artichokes is reassessed at its existing level of 0.05 ppm.

Avocado

Adequate residue data are available for avocado. The reviewed Craven replacement data (MRID 43794002) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of avocados harvested 241 days following a single directed spray application of the 1.6 lb/gal EC formulation at 2.0 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for avocados is reassessed at its existing level of 0.05 ppm.

Banana

The reregistration requirements for data depicting magnitude of the residue in bananas are not fulfilled. In addition, labels with appropriate English translation must be submitted from major banana-producing countries in Central America where oxyfluorfen is registered. As previously requested (DP Barcode D171996, 4/16/92, F. Fort), residue field trials (one in Puerto Rico and two in representative Central American countries) should be conducted, and these trials should reflect two applications of a representative EC formulation, with a 90-day retreatment interval at the maximum label rate of 0.85 lb ai/A, and samples must be harvested at the stipulated 3-day PHI.

Cacao beans

The initial Residue Chemistry Chapter for the Oxyfluorfen RED document (DP Barcodes D226225 and D228704, 9/26/96, C. Eiden) did not require additional residue data for cacao beans based on an earlier Agency decision (PP#0E3898; CB No. 7003, 9/25/90, F. Griffith) to translate the available field trial data for pome fruits, stone fruits, tree nuts, olives, dates, and kiwifruit to cacao beans. Following re-examination of registered uses (see Table A), HED concludes that the registered uses of oxyfluorfen on cacao beans substantially differ from the above tree crops to allow translation of residue data. The registered uses of oxyfluorfen on pome fruits, stone fruits, tree nuts, olives, dates, and kiwifruit include applications to tree crops during dormant stages with maximum seasonal rates of 2.0 lb ai/A, and unspecified built-in PHIs. The registered uses of oxyfluorfen on cacao beans include applications during non-dormant stage with a maximum seasonal rate of 6.0 lb ai/A, and a 1-day PHI. Therefore, HED is now requiring residue data for cacao beans for reregistration purposes. Details of the required data are presented in the respective endnote for 860.1500 of Table B.

Coffee

Adequate residue data are available for coffee. The Oxyfluorfen Phase 4 Review (MRIDs 00102529, 92136037, and 92136073) reported that in field trials conducted in HI, residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on all samples of coffee beans treated according to registered uses. Field trial data, submitted in conjunction with a coffee processing study (MRID 44172301), indicate that residues of oxyfluorfen were each <0.01 ppm (nondetectable) in/on samples of mature coffee cherries and green coffee beans harvested one day following a single directed spray application of the 1.6 lb/gal EC formulation to coffee orchard floor at 7.2 lb ai/A (1.2x the maximum seasonal application rate). Based on these data, the established tolerance for coffee is reassessed at its existing level of 0.05 ppm.

Cottonseed and gin byproducts

Adequate residue data, reported from two previous cotton petitions, are available for cottonseed. In conjunction with PP#8G2028/FAP#9H5199, the results of several cotton field trials were summarized in MRID 92136075. These trials indicate that residues of oxyfluorfen ranged from nondetectable (<0.01 ppm) to 0.01 ppm in/on 25 samples of cottonseed harvested 74-174 days following one post-emergence directed spray application of a representative formulation at 0.25 to 2.0 lb ai/A (0.25-2x the maximum seasonal rate); only four treated samples bore quantifiable residues of 0.01 ppm while the remaining 21 samples bore nondetectable residues (<0.01 ppm). In conjunction with PP#1F2488/FAP#1H5296, the results of 12 additional cotton trials were summarized in MRID 92136039. These trials indicate that residues of oxyfluorfen ranged from nondetectable (<0.01 ppm) to 0.01 ppm in/on 25 samples of cottonseed harvested 97-147 days following one post-emergence directed spray application of a representative formulation at 0.25 to 1.0 lb ai/A (0.25-1x). Based on

these data, the established tolerance for cottonseed is reassessed at its existing level of 0.05 ppm.

Additional data are required for cotton gin byproducts. Data depicting the magnitude of oxyfluorfen residues of concern in/on cotton gin byproducts following application(s) of a representative formulation according to the maximum registered use patterns are required. Cotton must be harvested by commercial equipment (stripper and mechanical picker) to provide an adequate representation of plant residue for the ginning process. A minimum of three field trials for each type of harvesting (stripper and mechanical picker) are required, for a total of six field trials. An appropriate tolerance for this RAC should be proposed once acceptable data have been submitted and evaluated.

Dates

Adequate residue data are available for dates. Data (MRIDs 00145972, 40223205, 92136041, and 92136076) reported in the Oxyfluorfen Phase 4 Review indicate that the established tolerance will not be exceeded following application of a representative formulation according to the registered use pattern for dates. HED will allow confirmatory residue data from figs to be translated to dates. The reviewed Craven replacement fig data (MRID 43794003) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on all samples of figs harvested 206 days following a single directed spray application of the 1.6 lb/gal EC formulation made to dormant trees at 2.0 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for dates is reassessed at its existing level of 0.05 ppm.

Fallow Land

Pending required label amendments (see Endnote 2 of Table B), the reregistration requirements for magnitude of the residue in fallow beds are fulfilled.

Feijoa

The oxyfluorfen tolerance for feijoa was established under an IR-4 petition (PP#9E3779) and relied on residue data translated from apricots, nectarines, peaches, plums, and almonds. For the purpose of reregistration, no additional data are required for feijoa. HED will allow the translation of residue data from pome fruits and tree nuts to feijoa since the registered dormant uses of these crops remain identical. The established tolerance is reassessed at its existing level of 0.05 ppm.

Fig

Adequate residue data are available for fig. The reviewed Craven replacement data (MRID 43794003) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on figs harvested 206 days following a single directed spray application of the 1.6 lb/gal EC formulation made to dormant fig trees at 2.0 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for figs is reassessed at its existing level of 0.05 ppm.

Grape

Adequate residue data are available for grape. The results of grape field trials (MRIDs 00036703, 00110745, 00146340, 92136043, and 92136078) reported in the Oxyfluorfen Phase 4 Review indicate that residues of oxyfluorfen were 0.01-0.02 ppm in/on grape samples harvested at an unspecified interval following a single application of the 2 lb/gal EC formulation at 0.25-8.0 lb ai/A (0.125-4x the maximum seasonal rate). Oxyfluorfen residues $0.01 ppm were found in only 6 of 31 samples.

Adequate data are available to support oxyfluorfen uses registered under FIFRA Section 24c for SLNs WA970024 and CA970026 (DP Barcode D239556, 10/2/97, J. Abbotts). The reviewed data (MRIDs 44385401 and MRID 44385402) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on all grape samples from the non-CA trials harvested 14-15 and 30-33 days following a single directed spray application of the 1.6 lb/gal EC formulation to the base of non-dormant vines at 1.0 or 2.0 lb ai/A (0.5 and 1x the maximum seasonal rate for this type of use). For each CA location, trials were conducted at 14, 30, and 60 day PHIs. For one 60 day sample in one trial, residues of oxyfluorfen in/on grapes were 0.0042 ppm; for all other CA samples residues were below the LOQ. Based on these data, the established tolerance for grape is reassessed at its existing level of 0.05 ppm.

Guava

Adequate residue data are available for guava. Residue data (MRIDs 00158014, 92136044, and 92136079) submitted by IR-4 and reported in the Oxyfluorfen Phase 4 Review indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on all samples harvested 1 or 7 days following the last of eight or nine applications of the 2 lb/gal EC formulation at 1.0, 2.0, and 4.0 lb ai/A for a maximum seasonal rate of 12 lb ai/A (3x maximum seasonal rate). Based on these data (exaggerated rates and nonquantifiable residues), the established tolerance with regional registration for guava is reassessed at its existing level of 0.05 ppm.

Kiwifruit

Adequate residue data are available for kiwifruit. The reviewed Craven replacement data (MRID 43794005) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of kiwifruit harvested 255 days following a single directed spray application of the 1.6 lb/gal EC formulation to non-dormant vines at 2.0 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for kiwifruit is reassessed at its existing level of 0.05 ppm.

Mint, tops

Adequate residue data are available for mint tops. The mint field trial data (MRIDs 00071290, 00071291, 00071292, 00071293, 92136046, 92136047, and 92136082) reported in the Oxyfluorfen Phase 4 Review indicate that residues of oxyfluorfen ranged from <0.01 ppm (nondetectable) to 0.03 ppm in/on samples of mint hay harvested 127-182 days following a single dormant application of the 2 lb/gal EC formulation at 2.0 lb ai/A (1x the maximum application rate) or 4.0 lb ai/A (2.0x). Based on these data, the established tolerance for mint hay should be lowered from 0.1 ppm to 0.05 ppm (DP Barcode D220411, 11/1/95, S. Knizner).

Olive

Adequate residue data are available for olive. The reviewed Craven replacement data (MRID 43794006) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of olives harvested 222 days following a single directed spray application of the 1.6 lb/gal EC formulation to non-dormant olive trees at 2.0 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for olive is reassessed at its existing level of 0.05 ppm.

Papaya

Adequate residue data are available for papaya. Data (MRID 40783201) reported in the original papaya petition review (PP#8E3677, 9/22/88, M. Nelson) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on all samples of papaya fruits harvested 1-7 days following the last of three applications of the 1.6 lb/gal EC formulation at 0.5, 1.0, 2.0, or 4.0 lb ai/A/application (0.5x, 1x, 2x, or 4x the maximum single and seasonal rates, respectively). Based on these data, the established tolerance with regional registration for papaya is reassessed at its existing level of 0.05 ppm.

Persimmon

No additional persimmon field trial data are required for reregistration. The available field trial data for tree fruit and nut crops will be translated to persimmons since the registered uses of these crops are similar to persimmon (PP#9E3718; CB No. 4837, 4/14/89, M. Nelson). Based on these translated data, the established tolerance for persimmon is reassessed at its existing level of 0.05 ppm.

Pomegranate

Adequate residue data are available for pomegranate. The reviewed Craven replacement data (MRID 43794004) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of pomegranates harvested 241 days following a single directed spray application of the 1.6 lb/gal EC formulation to dormant pomegranate trees at 2.0 lb ai/A (1x the maximum single and seasonal rates). Based on these data, the established tolerance for pomegranates is reassessed at its existing level of 0.05 ppm.

Strawberries

Adequate residue data are available to support oxyfluorfen use on strawberries under FIFRA Section 18. Data (Project PR-3443, No MRID assigned) submitted by IR-4 (DP Barcode D203459, 5/23/94, M. Nelson) in support of this Section 18 emergency exemption indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on all samples of strawberries harvested 123 or 201 days following the last of one or two applications of the 1.6 lb/gal EC formulation at 0.5 or 1.0 lb ai/A/application for a maximum seasonal rate of 2.0 lb ai/A (4x the maximum seasonal rate). Based on these data (exaggerated rates and nonquantifiable residues), the established time-limited tolerance for strawberries is reassessed at its existing level of 0.05 ppm. IR-4 is in the process of submitting a Section 3 request for establishment of permanent tolerances in strawberries. This tolerance will be reassessed again pending the outcome of the full petition review by HED.

Grass Grown for Seed

Residue data in support of a regional registration request for use of oxyfluorfen on grass grown for seed in the states of OR and WA (under IR-4 and the Agricultural Experiment Station of Oregon) were originally submitted under PP#3E4175. Residues of oxyfluorfen *per se* were nondetectable (<0.03 ppm) in/on all samples of grass forage, hay, straw, and seed screenings harvested 123-154 days following a single postemergence over the top application of the 1.6 lb/gal EC formulation made either early in the growing season or later in the growing season at 0.375 lb ai/A (1x the maximum proposed seasonal rate). HED concludes that the reassessed animal commodity tolerances are adequate to cover any residue contribution from proposed uses of oxyfluorfen on grasses grown for seed. Also, there are no poultry feed commodities associated with this petition. HED has concluded that there are no residue chemistry data requirements that would preclude the establishment of tolerances with

regional registration for residues of oxyfluorfen *per se* in/on grass forage, hay, straw, and seed screening at 0.05 ppm each. Although PP#3E4175 was in reject status (J. Morales, 5/19/93, D185362), IR-4 has recently submitted additional residue data to support the petition. These data are currently under review. The preliminary conclusions of this review support the establishment of a 0.05 ppm tolerance (J. Morales, D275124).

GLN 860.1520: Processed Food/Feed

Adequate processing studies are available for apples, coffee, corn (field), cottonseed, mint, and soybeans. These studies suggest that residues of oxyfluorfen do not concentrate (or do not concentrate significantly) to warrant the establishment of oxyfluorfen tolerances in the processed food/feed commodities of the above crops. HED notes that tolerances for cottonseed oil, mint oil, and soybean oil that were previously established under 40 CFR §185.4600 have been revoked.

The processing data requirements for figs, grapes, olives, and plums are waived based on the results of translocation/metabolism studies which indicate that oxyfluorfen is not taken up by plants. A summary of the available processing data, arranged alphabetically by crop, is presented below; items inside the parenthesis are the recognized processed commodities listed in Table 1 of OPPTS 860.1000.

Apple (wet pomace and juice)

An adequate apple processing study is available. The Oxyfluorfen Phase 4 review reported the results of a processing study (MRID 00141092) wherein residues of oxyfluorfen did not concentrate in juice (cider) and wet pomace (wet cake) but concentrated 12x in dry pomace (wet cake) following processing of apples bearing detectable oxyfluorfen residues (0.02 and 0.04 ppm). The previous Agency recommendation to propose a tolerance for dry pomace based on the observed concentration factor of 12x is no longer required because dry pomace has been removed from Table 1 as a significant livestock feed item.

Coffee (roasted instant bean)

An adequate coffee processing study, submitted by IR-4, is available. This study (MRID 44172301) indicates that residues of oxyfluorfen were less than the analytical method's LOQ (<0.01 ppm) in/on mature coffee cherries and green coffee beans harvested 1 day following a single directed spray application of the 1.6 lb/gal EC formulation to coffee orchard floor at 7.2 lb ai/A (1.2x the maximum seasonal rate). The 1.2x rate is equivalent to the maximum theoretical concentration factor for roasted coffee based on separation into components (Table 3, OPPTS 860.1520), and

is an adequate exaggerated rate for the coffee processing study. Because oxyfluorfen residues were below the LOQ in/on coffee beans treated at 1.2x, processing data on roasted coffee beans are not required. The Agency (CB No. 12194, DP Barcode D193009, 8/31/93, S. Funk) has previously waived the data requirements for processed instant coffee.

Corn, field (wet milling: starch and refined oil; dry milling: meal, grits, flour, and refined oil)

Field residue data (MRID 43944801) indicate that residues of oxyfluorfen were <0.01 ppm (nondetectable) in/on samples of field corn grain treated with the 1.6 lb/gal EC formulation at application rates of 1x and 25x rates. The maximum theoretical concentration factor for corn processed commodities is 25x. The requirement for a corn processing study is, therefore, waived because nondetectable residues resulted from field tests conducted at a rate equivalent to the maximum theoretical concentration factor. Tolerances for field corn processed commodities are not required.

Cottonseed (meal, hulls, and refined oil)

Adequate cotton processing studies are available. The results of two cotton processing studies (MRID 92136040) were initially reported in conjunction with PP#1F2488/FAP#1H5296 (10/9/81, M.J. Nelson) and subsequently re-evaluated (DP Barcode D220411, 11/95, S. Knizner) as part of the evolving Agency policy on processed foods. Residues of oxyfluorfen did not concentrate in meal but concentrated 2.5x and 4x in crude oil. The available residue data for cottonseed (the RAC) indicate that the highest average field trial (HAFT) residue is 0.01 ppm. Based on this HAFT value and the average concentration factor of 3.3x for cottonseed oil, the maximum expected residues of oxyfluorfen in cottonseed oil are 0.033 ppm which is lower than the reassessed tolerance of 0.05 ppm for cottonseed. Therefore, the registrant does not need to propose a tolerance for cottonseed oil; any finite residues expected in refined cottonseed oil resulting from application of oxyfluorfen according to registered uses can be adequately covered by the reassessed RAC tolerance.

Processing data on cotton hulls are not available. Based on the aggregate of processing data for cotton as well as from other crops, HED does not expect oxyfluorfen residues to concentrate in cotton hulls and will not require bridging data. It should be noted that the tolerance for cottonseed remains at 0.05 ppm (for consistency purposes) even though the initial Residue Chemistry Chapter for the Oxyfluorfen RED document (DP Barcodes D226225 and D228704, 9/26/96, C. Eiden) recommended a lower tolerance (0.02 ppm). By reassessing the tolerance back to 0.05 ppm the registrant doesn't have to propose a tolerance for refined oil.

Figs (dried figs), Grapes (raisin and juice), Olives (oil), and Plums (prune)

Although processing studies on figs, grapes, olives, and plums are not available, these studies are not required for reregistration. In a meeting with Rohm and Haas to discuss Phase 4 Reregistration Review of Oxyfluorfen (12/31/91 memo by S. Funk, no DP Barcode), the Agency agreed to reserve the processing data requirements for these crops pending an evaluation of the requested translocation/metabolism studies. The results of translocation/metabolism studies conducted at exaggerated rates (5x) on tomatoes, onions, and peaches suggest that oxyfluorfen is not taken up by plants. Furthermore, data depicting magnitude of the residue in/on the RACs of figs, grapes, olives, and plums following treatment at registered and exaggerated rates, suggest that residues were mostly nondetectable (<0.01 ppm). Therefore, the processing data requirements for these crops are waived.

Mint (oil)

Adequate mint (peppermint and spearmint) processing studies are available. The results of several mint processing studies (MRID 92136046) were initially reported in conjunction with PP#1F2488/FAP#1H5296 (10/9/81, M.J. Nelson) and subsequently re-evaluated (DP Barcode D220411, 11/95, S. Knizner). Residues of oxyfluorfen concentrated at an average factor of 2.4x in mint oil. Based on the HAFT residue of 0.03 ppm and an average concentration factor of 2.4x, the maximum expected residues in mint oil are calculated as 0.072 ppm. The residue level for mint oil is not appreciably higher than the reassessed RAC tolerances of 0.05 ppm. Therefore, a food additive tolerance for mint oil is not required.

Soybean (meal, hulls, and refined oil)

An adequate soybean processing study is available. The results of this study (MRID 43764901) indicate that residues of oxyfluorfen were nondetectable (<0.01 ppm) in/on soybean seeds harvested 136 days following a single preemergence application of the 1.6 lb/gal EC formulation at 1x or 5x the maximum label rate. Soybeans (dry seed) contain 20% oil by weight, resulting in a maximum concentration factor of 5x for oil. Because non-quantifiable residues were found in/on dry soybean seeds following treatment at a rate equal to the maximum theoretical concentration factor, the RAC samples were not processed further. Based on this study, tolerances for soybean meal, hulls, and refined oil are not warranted.

GLN 860.1480: Meat, Milk, Poultry, and Eggs

The reregistration requirements for data depicting magnitude of the residue in milk, eggs, and livestock tissues are fulfilled. The registrant has submitted acceptable animal feeding studies to reassess the adequacy of established oxyfluorfen tolerances on animal commodities. A summary of the animal feeding data relative to the maximum theoretical dietary burdens of oxyfluorfen to beef cattle, dairy cattle, and poultry is included in this document.

Maximum theoretical dietary burdens

The potential for secondary transfer of oxyfluorfen residues to animal commodities exists because the herbicide is registered for use on a variety of livestock feed commodities. The maximum theoretical dietary burdens of oxyfluorfen to beef cattle, dairy cattle, and poultry are calculated in the table below. Only livestock feed items which are currently eligible for reregistration are included in the dietary burden calculation.

Calculation of maximum dietary burdens of oxyfluorfen to livestock and poultry.

Feed Commodity	% Dry Matter[1]	% Diet[1]	Reassessed Tolerance Level (ppm)[2]	Dietary Contribution (ppm)[3]
Beef Cattle				
Almond hulls	90	10	0.1	0.011
Soybean seed	89	10	0.05	0.006
Corn grain and meal	88	80	0.05	0.045
TOTAL BURDEN		100		**0.062**
Dairy Cattle				
Almond hulls	90	10	0.1	0.011
Soybean seed	89	15	0.05	0.008
Corn grain and meal	88	40	0.05	0.023
TOTAL BURDEN		65		**0.042**
Poultry				
Corn grain and meal	--	80	0.05	0.040
Soybean seed	--	20	0.05	0.004
TOTAL BURDEN		100		**0.044**

[1] Table 1 (OPPTS Guideline 860.1000).
[2] Reassessed level based on data from field trials.
[3] Contribution = [tolerance ÷ %DM] X %diet).

Cattle feeding study

In a cattle feeding study (MRID 43152201), lactating cows were orally dosed with technical grade oxyfluorfen via gelatin capsules for 28 consecutive days at dietary levels of 0.278, 0.834, and 2.78 ppm, based on a daily feed consumption of 18.4 kg/animal. The feeding levels are approximately equivalent to 5x, 14x, and 45x the maximum dietary burden for beef cattle, respectively; or 7x, 20x, and 66x the maximum dietary burden for dairy cattle, respectively. Milk samples were collected on test days 1, 4, 7, 10, 14, 17, 21, 24, 28, and 31. Within 24 hours of the final dosing period, cows from each dose group were sacrificed and samples of muscle (pectoral), liver, kidney, and peritoneal fat were collected. Milk and tissue samples were analyzed for residues of oxyfluorfen and its three isomers using GLC/ECD methods with an LOQ of 0.01 ppm and an LOD of 0.003 ppm. The method was deemed adequate for data collection based on acceptable concurrent method recoveries. The results of the dairy cattle feeding study are summarized in the table below.

Residues of oxyfluorfen and its isomers in milk and tissues of lactating cows dosed with oxyfluorfen in the diet at 0.278 ppm, 0.834 ppm, and 2.78 ppm oxyfluorfen for 28 days.

Matrix	Total residues [1] by dose level		
	0.278 ppm	0.834 ppm	2.78 ppm
Milk [2]	<0.003	<0.003	<0.003-0.009
Liver [3]	<0.003	<0.003	<0.003
Fat [3]	<0.003-0.007	0.009-0.016	0.075-0.102
Muscle [3]	<0.003	<0.003	<0.003-0.011
Kidney [3]	<0.003	<0.003	0.003-0.006

[1] Total residue is the sum of oxyfluorfen (RH-2915) and its three isomers RH-0671, RH-2382, and RH-4672. Results were not corrected for method recoveries.

[2] Results represent analyses of quadruplicate milk samples collected from test days 1, 4, 7, 10, 14, 17, 21, 24, and 28.

[3] Quadruplicate samples (day-28) of each tissue were analyzed.

All control samples bore nondetectable (<0.003 ppm) residues. Based on these data, the established tolerances of 0.05 ppm each for milk, and the fat, meat, and meat byproducts of ruminants are reassessed at 0.01 ppm each, the LOQ of the data-collection method. HED notes that in conjunction with a pending peanut petition (PP#3F4229/FAP#3H5674), Rohm and Haas has proposed a single analyte enforcement method (GC/ECD Method TR 34-95-110 with a confirmatory GC/MS method) for determination of oxyfluorfen *per se* in animal commodities. The proposed method was adequately validated by an independent laboratory and will be forwarded to ACB for a petition method validation.

Poultry feeding study

In a poultry feeding study (MRID 43152201), laying hens were dosed daily with technical grade oxyfluorfen via capsule for 28 days at dietary levels of 0.086, 0.345, or 1.21 ppm, based on a feed consumption of 185 grams/bird. The feeding levels are approximately equivalent to 2x, 8x, and 28x the maximum dietary burden for poultry, respectively. Eggs were collected twice daily and pooled from three to four hens within each dose group on test days 1, 3, 7, 10, 14, 17, 21, 24, and 28. The hens were sacrificed within 24 hours of the final dosing period. At sacrifice, samples of muscle (breast and thigh), fat (abdominal and subcutaneous), and liver were collected. Egg and tissue samples were analyzed for oxyfluorfen and its isomers using GLC/ECD Methods with an LOQ of 0.01 ppm and an LOD of 0.003 ppm. The method was deemed adequate for data collection based on acceptable concurrent method recoveries. The results of the poultry feeding study are summarized in the table below.

Uncorrected residues of oxyfluorfen and its isomers in eggs and tissues of laying hens dosed at 0.086 ppm, 0.345 ppm, and 1.21 ppm oxyfluorfen for 28 days.

Matrix	RH-0671	RH-2382	RH-4672	Oxyfluorfen
		Residues in 0.086 ppm dose group		
Eggs [1]	<0.003	<0.003	<0.003	<0.003-0.024
Liver [2]	0.004-0.005	<0.003-0.012	<0.003	<0.003-0.006
Fat [2]	<0.003	<0.003	<0.003	0.084-0.163
Muscle [2]	<0.003	<0.003	<0.003	<0.003-0.004
		Residues in 0.345 ppm dose group		
	RH-0671	RH-2382	RH-4672	Oxyfluorfen
Eggs	<0.003	<0.003	<0.003	<0.003-0.057
Liver	<0.003	<0.003	<0.003	0.018-0.025
Fat	<0.003	0.008-0.009	<0.003	0.487-0.620
Muscle	<0.003	<0.003	<0.003	0.011-0.022
		Residues in 1.21 ppm dose group		
	RH-0671	RH-2382	RH-4672	Oxyfluorfen
Egg	<0.003	<0.003-0.213	<0.003	<0.003-0.217
Liver	0.003-0.005	<0.003	<0.003	0.049-0.066
Fat	<0.003	0.025-0.031	0.007-0.009	1.35-1.73
Muscle	<0.003	<0.003	<0.003	0.047-0.055

[1] Results represent analyses of triplicate egg samples collected on days 1, 3, 7, 10, 14, 17, 21, and 28.
[2] Triplicate samples (day-28) of each tissue were analyzed.

All control samples bore nondetectable (<0.003 ppm) oxyfluorfen residues. For the purpose of tolerance reassessment, HED will rely on oxyfluorfen residues observed from the 0.086- ppm dose level (~2x the maximum dietary burden). At this dose level, residues of oxyfluorfen *per se* were below established tolerances (0.05 ppm each for eggs, meat, and meat by-products) except for fat. The available data indicate that the following tolerances for oxyfluorfen *per se* would be appropriate for poultry commodities: 0.03 ppm for eggs, 0.01 ppm for meat and meat by-products, and 0.2 ppm for fat.

GLN 860.1400: Water, Fish and Irrigated Crops

Oxyfluorfen is presently not registered for direct use on potable water and aquatic food and feed crops; therefore, no residue chemistry data are required under these guideline topics.

GLN 860.1460: Food Handling

Oxyfluorfen is presently not registered for use in food-handling establishments; therefore, no residue chemistry data are required under this guideline topic.

GLNs 860.1850 and 860.1900: Confined/Field Accumulation in Rotational Crops

Pending required label amendments (See Endnote 39 in Table B), the reregistration requirements for confined rotational crops (860.1850) are fully satisfied. Details of the required label amendments are presented in the respective endnotes for 860.1200 (Directions for Use) and 860.1850 (Confined Rotational Crops) of Table B. No limited or extensive field trials (860.1900) are required at this time.

The available confined rotational crop study (MRID 40567001) indicates that the total radioactive residues (TRR) were either at the detection limit or nondetectable (#0.01 ppm) in/on a variety of rotational crops representing root/tuber vegetables, fruiting and leafy vegetables, and grain crops at or close to the minimum plantback intervals specified on the label under fallow bed uses. The TRR was highest, ranging from 0.02 to 0.06 ppm, in/on wheat chaff and straw at a 61-day plantback interval. Further characterization and identification of radioactive residues in wheat chaff and straw were not performed and are not required in consideration of the 2x rate utilized in the study.

Table A. Food/Feed Use Patterns Subject to Reregistration for Oxyfluorfen (Case 2490).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Almonds (See also "Tree nuts")						
Directed spray application Nondormant Ground equipment	1.6 lb/gal EC [CA890012] 2 lb/gal EC [CA960020]	2.0 lb/A	Not specified (NS)	2.0 lb/A (nondormant season)	30	Use limited to CA. Application may be made in a minimum of 20 gal of water/A (minimum of 10 gal/A for certain tank mix applications). Application may be made alone or as a tank mix with other herbicides.
Chemigation Nondormant Flood (basin) irrigation, low-volume sprinkler (microsprinkler) or drip trickle irrigation	2 lb/gal EC [CA960020]	2.0 lb/A	NS	2.0 lb/A (nondormant season)	30	Use limited to CA.
Apples (See "Pome fruits")						
Apricots (See "Stone fruits")						
Artichokes, Globe						
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	1	2.0 lb/A	5	Applications may be made in a minimum of 40 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited for the 1.6 lb/gal EC formulation only.
		1.0 lb/A	2	2.0 lb/A	5	The first application is made to susceptible weed seedlings and the second application is made 8-10 weeks later. Applications may be made in a minimum of 40 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited for the 1.6 lb/gal EC formulation only.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Avocados						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Beech nut (See "Tree nuts")						
Blackberries						
Directed spray application Early season (primocane growth 4 to 6 inches) or dormant Ground equipment	1.6 lb/gal EC [OR960005] 2 lb/gal EC [OR960036] [OR000028]	0.8 lb/A (early season) 1.0 lb/A (dormant)	4	2.0 lb/A	15	Use limited to OR. Applications may be made in a minimum of 50 gal water/A.
Brazil nut (See "Tree nuts")						
Broccoli						
Broadcast application Pretransplant (preplant) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	NS	Applications may be made in a minimum of 20 gal of water/A.
Butternut (See "Tree nuts")						

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Cabbage						
Broadcast application Pretransplant (preplant) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	NS	See "Broccoli."
Cacao beans (bearing and nonbearing)						
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	NS	6.0 lb/A	1	Applications may be made in a minimum of 15 gal of water/A.
Directed spray application Pretransplant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	1.0 lb/A	NS	6.0 lb/A	1	
Cashew (See "Tree nuts")						
Cauliflower						
Broadcast application Pretransplant (preplant) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	NS	See "Broccoli."
Cherries (See "Stone fruits")						
Chestnut (See "Tree nuts")						

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Chickpea (Garbanzo bean)						
Broadcast application Preemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.25 lb/A	NS	NS	NS	Use limited to CA. Applications may be made in a minimum of 25 gal of water/A. Feeding of bean, vines, or hay is prohibited.
	1.6 lb/gal EC [CA920029] 2 lb/gal EC [AZ000001] [CA960022]	0.25 lb/A	NS	NS	NS	Use limited to AZ and CA. Applications may be made in a minimum of 20 gal of water/A.
Chinquapin (See "Tree nuts")						
Coffee (bearing and nonbearing)						
Broadcast application (over the top) Dormant transplants Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	NS	6.0 lb/A	1	Use limited to HI. Applications may be made in a minimum of 30 gal of water/A. Applications may be made alone or as a tank mix with other herbicides.
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	NS	6.0 lb/A	1	
Directed spray application Pretransplant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	1.0 lb/A	NS	6.0 lb/A	1	

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Corn, field						
Directed spray application Foliar/postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243] [NC990007] [SC000002]	0.75 lb/A (first application) 0.5 lb/A (subsequent applications)	NS	1.25 lb/A	30 [707-145] [707-174] 60 [707-243] [NC990007] [SC000002]	Use in conjunction with the USDA "witchweed" eradication program in NC and SC. Applications may be made in a minimum of 10 gal of water/A. The use of any plants from a treated field for green chop, ensilage, forage, or fodder is prohibited. PHI is 60 days.
Broadcast application Fallow bed Ground or aerial equipment	1.6 lb/gal EC [LA930011] 2 lb/gal EC [AR960009] [LA960012] [MS960015]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	Not applicable (NA)	Use limited to AR, LA, and MS. Application may be made in a minimum of 20 gal of water/A using ground equipment or 5 gal/A by air. Applications may be made alone or as a tank mix with other herbicides. A 7-day interval from treatment to planting is specified. The use of any plants from a treated field for green chop, ensilage, forage or fodder or the feeding or grazing of animals on any treated area is prohibited. PHI is 60 days.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Cotton						
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] [VA930010] 2 lb/gal EC [707-145] [707-243]	0.5 lb/A	NS	0.5 lb/A (single or multiple applications)	90 [707-174] [707-243] [VA930010] NS [707-145]	Use limited to AL, AR, GA, LA, MS, MO, NM, NC, OK, SC, TN, TX, and VA (Southern cotton). Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. Application after initiation of bloom is prohibited.
				1.0 lb/A (multiple applications) 0.5 lb/A (single application)	75 [707-174] [707-243] NS [707-145]	Use limited to AZ and CA (Western cotton). Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. Application after initiation of bloom is prohibited.
Broadcast application Fallow bed Aerial equipment	2 lb/gal EC [707-145]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	NA	Use limited to AZ and CA. Applications may be made in a minimum of 10 gal of water/A (minimum of 5 gal/A for certain tank mix applications). Applications may be made alone or as a tank mix with other herbicides. A 14-day interval from treatment to incorporation and planting is specified.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Cotton (continued)						
Broadcast application Fallow bed Ground equipment	2 lb/gal EC [707-145]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	NA	Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. A 14-day interval from treatment to incorporation and planting is specified.
Broadcast application Fallow bed Ground or aerial equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	NA	Applications may be made in a minimum of 20 gal of water/A using ground equipment or 5 gal/A by air (minimum of 10 gal/A by air in CA). Applications may be made alone or as a tank mix with other herbicides. A 7-day interval from treatment to planting is specified.
Crabapples (See "Pome fruits")						
Dates						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Fallow land						
Broadcast application Fallow bed Ground or aerial equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	NA	Applications may be made in a minimum of 20 gal of water/A using ground equipment or 10 gal/A by air. Applications may be made alone or as a tank mix with other herbicides.
Broadcast application Fallow bed Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.5 lb/A	NS	NS	NA	Use limited to ID, OR, and WA. Use is restricted to summer fallow land that will be planted back the following year to barley, oats, or winter wheat. Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides.
Feijoa						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Figs						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Filberts (See "Tree Nuts")						
Garbanzo bean (see "Chickpea")						
Garlic						
Broadcast or band application Postemergence to seeded garlic (at least 2 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.25 lb/A	NS	0.5 lb/A	60	Use limited to direct-seeded garlic in Western states of AZ, CA, CO, ID, NV, NM, OR, TX, UT, and WA. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.
Broadcast or band application Postemergence to seeded garlic (at least 3 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.06 lb/A	NS	0.5 lb/A	60	Use limited to direct-seeded garlic in Northeastern states of CT, ME, MA, NH, NJ, NY, RI, and VT. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Garlic (continued)						
Broadcast or band application Postemergence to seeded garlic (at least 2 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.12 lb/A	NS	0.5 lb/A	60	Use limited to direct-seeded garlic in all other states not listed above. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.
Broadcast or band application After transplanting Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	60	Use limited to transplanted garlic for all states except the Northeastern states listed above. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.
		0.06 lb/A	NS	0.5 lb/A	60	Use limited to transplanted garlic in the Northeastern states listed above. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.
Broadcast application Preemergence Ground or aerial equipment	1.6 lb/gal EC [CA920018] 2 lb/gal EC [CA960021]	0.25 lb/A	NS	0.5 lb/A	60	Use limited to CA. Applications may be made in a minimum of 20 gal of water/A using ground equipment or 10 gal/A by air. For use on dry bulb garlic only.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Garlic (continued)						
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [CA920018] 2 lb/gal EC [CA960021] [NV990001]	0.25 lb/A	NS	0.5 lb/A	60	Use limited to CA and NV. Applications may be made in a minimum of 20 gal of water/A. For use on dry bulb garlic only.
Chemigation Preemergence or postemergence Sprinkler irrigation	1.6 lb/gal EC [CA920018] 2 lb/gal EC [CA960021]	0.25 lb/A	NS	0.5 lb/A	60	Use limited to CA. For use on dry bulb garlic only.
Grapes						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Directed spray or broadcast (over the top) application Dormant (nonbearing) Ground equipment	1.6 lb/gal EC [CA950008] 2 lb/gal EC [CA960023] [WA970023]	2.0 lb/A	NS	NS	NS	Use limited to CA and WA. Applications may be made in a minimum of 40 gal of water/A. Application after buds start to swell is prohibited.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Grapes (continued)						
Directed spray application Nondormant Ground equipment	2 lb/gal EC [CA970026]	0.5 lb/A	NS	2.0 lb/A	14	Use limited to CA as a nondormant application to wine grapes and raisin grapes only. Applications may be made in a minimum of 20 gal of water/A (minimum of 10 gal/A for certain tank mix applications). Application may be made alone or as a tank mix with other herbicides.
	2 lb/gal EC [OR000001] [WA970013]	0.5 lb/A	NS	2.0 lb/A	60	Use limited to OR and WA as a nondormant application to wine and processing grapes only. Applications may be made in a minimum o f 50 gal of water/A. Application may be made alone or as a tank mix with other herbicides.
Chemigation Nondormant Low-volume sprinkler (microsprinkler) or drip trickle irrigation	2 lb/gal EC [CA970026] [WA970024]	0.5 lb/A	NS	2.0 lb/A	14	Use limited to CA and WA as a nondormant application to grapes grown for processing (includes juice, wine, and raisin grapes only).

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Grasses grown for seed						
Broadcast application Ground equipment	2 lb/gal EC [OR990006] [WA990035]	0.125-0.375 lb/A	2	0.375 lb/A	150	Use limited to OR and WA for grass grown for seed (including Kentucky bluegrass, tall fescue, orchardgrass, bentgrass, and perennial ryegrass). Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. A 150-day pregrazing interval (PGI) has been established.
	2 lb/gal EC [OR990006]	0.12 lb/A	1	0.12 lb/A	150	Use limited to OR for grass grown for seed (including fine fescues: chewing, creeping red, and hard types). Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. A 150-day pregrazing interval (PGI) has been established.
	2 lb/gal EC [OR990036]	0.0375 lb/A	1	NS	150	Use limited to OR for grass grown for seed (including perennial ryegrass and tall fescue). Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. A 150-day pregrazing interval (PGI) has been established.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Guavas (bearing and nonbearing)						
Directed spray application Postemergence (after new foliage has hardened off) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	NS	4.0 lb/A	1	Use limited to HI. Applications may be made in a minimum of 15 gal of water/A. Applications may be made alone or as a tank mix with other herbicides.
Hickory Nut (See "Tree Nuts")						
Horseradish						
Broadcast application Preemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	NS	NS	Applications may be made in a minimum of 20 gal of water/A.
Kiwifruit						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Loquat (See "Pome fruits")						

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Macadamia Nut (bearing and nonbearing; see also "Tree nuts")						
Directed spray application Postemergence (after new foliage has hardened off) Ground equipment	2 lb/gal EC [HI960010]	2.0 lb/A 1.0 lb/A (lava soil)	NS	4.0 lb/A	7	Use limited to HI. Applications may be made in a minimum of 15 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. Feeding or grazing of animals on any treated area is prohibited.
Mayhaws (See "Pome fruits")						
Nectarines (See "Stone fruits")						
Olive						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Onions, bulb						
Broadcast or band application Postemergence to seeded onions (at least 2 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.25 lb/A	NS	0.5 lb/A	45	Use limited to direct-seeded onions in Western states of AZ, CA, CO, ID, NV, NM, OR, TX, UT, and WA. Applications may be made in a minimum of 40 gal of water/A.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Onions, bulb (continued)						
Broadcast or band application Postemergence to seeded onions (at least 3 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.06 lb/A	NS	0.5 lb/A	45	Use limited to direct-seeded onions in Northeastern states of CT, ME, MA, NH, NJ, NY, RI, and VT. Applications may be made in a minimum of 40 gal of water/A.
Broadcast or band application Postemergence to seeded onions (at least 2 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.12 lb/A	NS	0.5 lb/A	45	Use limited to direct-seeded onions in all other states not listed above. Applications may be made in a minimum of 40 gal of water/A.
Broadcast or band application After transplanting Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	45	Use limited to transplanted onions for all states except the Northeastern states listed above. Applications may be made in a minimum of 40 gal of water/A.
		0.06 lb/A	NS	0.5 lb/A	45	Use limited to transplanted onions in the Northeastern states listed above. Applications may be made in a minimum of 40 gal of water/A.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Onions, bulb (continued)						
Broadcast or band application Pre-transplanting Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	45	Use prohibited in Northeastern and Western states listed above, except if specifically directed on other approved supplemental labeling. Applications may be made in a minimum of 40 gal of water/A.
Broadcast application Pre-transplanting Ground equipment	1.6 lb/gal EC [GA890006]	0.5 lb/A	NS	0.5 lb/A	NS	Use limited to GA. Applications may be made in a minimum of 40 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited.
Chemigation Postemergence (at least 2 true leaves) or after transplanting Sprinkler irrigation	1.6 lb/gal EC [CA880034] [OR910026] 2 lb/gal EC [OR970008]	0.25 lb/A	NS	0.5 lb/A	45 (OR) 60 (CA)	Use limited to CA and OR.
Chemigation Postemergence (at least 2 true leaves) Sprinkler irrigation	2 lb/gal EC [CA960026] [WA960033]	0.25 lb/A	NS	0.5 lb/A	45	Use limited to CA and WA.
Chemigation After transplanting Sprinkler irrigation	2 lb/gal EC [WA960033]	0.5 lb/A	NS	0.5 lb/A	45	Use limited to WA.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Onions Grown for Seed						
Broadcast application Postemergence (at least 4 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.03 lb/A	NS	0.5 lb/A	60	Use limited to onions grown for seed in Northeastern states of CT, ME, MA, NH, NJ, NY, RI, & VT. Applications may be made in a minimum of 40 gal/A.
Broadcast application Postemergence (at least 3 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.12 lb/A	NS	0.5 lb/A	60	Use limited to onions grown for seed in all other states not listed above. Applications may be made in a minimum of 40 gal/A.
Papayas						
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	1.0 lb/A	NS	3.0 lb/A	1	Use limited to HI. Initial application should occur no earlier than 4 months after transplanting or 6 months after direct seeding. Applications may be made in minimum of 15 gal of water/A and repeated at 4-month intervals.
Peaches (See "Stone fruits")						
Pears (See "Pome fruits")						
Pecans (See "Tree nuts")						

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Peppermint						
Broadcast or band application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145]	2.0 lb/A	1	NS	NA	Use limited to OR and WA (East of Cascades) and western ID. Application may be made in a minimum of 20 gal of water/A.
		0.75 lb/A	1	NS	NA	Use limited to western OR (Willamette Valley). Application may be made in a minimum of 20 gal of water/A.
	1.6 lb/gal EC [CA930014] [NV930002] [SD940001] 2 lb/gal EC [MT960003] [ND980001]	2.0 lb/A	NS	NS	NA	Use limited to CA, MT, ND, NV, and SD. Applications may be made in a minimum of 20 gal of water/A.
Broadcast application Dormant Ground equipment	2 lb/gal EC [707-243]	2.0 lb/A	1	NS	NA	Use limited to OR and WA (East of Cascades) and CA, ID, MT, NV, SD, and UT. Application may be made in a minimum of 20 gal of water/A.
		0.75 lb/A	1	NS	NA	Use limited to western OR (Willamette Valley). Application may be made in a minimum of 20 gal of water/A.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Peppermint (continued)						
Broadcast application Dormant Ground equipment	2 lb/gal EC [SD960007]	2.0 lb/A	1	NS	NA	Use limited to SD. Application may be made in a minimum of 20 gal of water/A.
Broadcast application Preemergence (dormant) Ground equipment	1.6 lb/gal EC [IN840003] [WI950001] 2 lb/gal EC [IN960004] [MI970002] [WI960009]	1.5 lb/A	NS	NS	NA	Use limited to IN, MI, and WI for mint grown in muck soil ($20% organic matter). Applications may be made in a minimum of 20 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited.
Persimmons						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Pistachios (See also "Tree Nuts")						
Directed spray application Nondormant Ground equipment	1.6 lb/gal EC [CA950007] 2 lb/gal EC [CA960019]	2.0 lb/A	NS	2.0 lb/A (nondormant season)	7	Use limited to CA. Application may be made in a minimum of 20 gal of water/A (minimum of 10 gal/A for certain tank mix applications). Application may be made alone or as a tank mix with other herbicides.
Chemigation Nondormant Flood (basin) irrigation	1.6 lb/gal EC [CA950007]	2.0 lb/A	NS	2.0 lb/A (nondormant season)	7	Use limited to CA.
Chemigation Nondormant Flood (basin) irrigation, low-volume sprinkler (microsprinkler) or drip trickle irrigation	2 lb/gal EC [CA960019]					
Plums (See "Stone fruits")						
Pome fruits (including apple, crabapple, loquat, mayhaws, pear, and quince)						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Pomegranates						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Prunes (See "Stone fruits")						
Quince (See "Pome fruits")						
Raspberries						
Directed spray application Early season (primocane growth 4 to 6 inches) Ground equipment	1.6 lb/gal EC [OR960006]	0.8 lb/A	2	1.2 lb/A	50	Use limited to OR and WA. Applications may be made in a minimum of 50 gal water/A.
	2 lb/gal EC [OR960037] [WA960034]	0.75 lb/A	2	1.25 lb/A	50	

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Soybeans						
Broadcast application (Conservation tillage) Early preplant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.75 lb/A	2	0.75 lb/A (all uses)	NS	Use prohibited in CA. Application should be made approximately 14 days prior to planting.
Broadcast application (No-till) Preemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.5 lb/A	2	0.75 lb/A (all uses) 0.5 lb/A (preemergent uses)	NS	Use prohibited in CA. Application should be made within 1 day of planting. Application may be made in a minimum of 20 gal of water/A. Application may be made alone or as a tank mix with other herbicides.
Broadcast application (Conventional till) Preemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.38 lb/A	2	0.75 lb/A (all uses) 0.5 lb/A (preemergent uses)	NS	
Directed spray application (Conventional-till) Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.25 lb/A	2	0.75 lb/A (all uses) 0.5 lb/A (preemergent uses)	NS	Use prohibited in CA. Application should be made when soybean plants are a minimum of 8 inches tall and before blooms appear. Application may be made in a minimum of 20 gal of water/A. Application may be made alone or as a tank mix with other herbicides.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Soybeans (continued)						
Broadcast application Fallow bed Ground or aerial equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	NA	Use prohibited in CA. Applications may be made in a minimum of 20 gal of water/A using ground equipment or 5 gal/A by air. Applications may be made alone or as a tank mix with other herbicides. A 7-day interval from treatment to planting is specified.
Spearmint						
Broadcast or band application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145]	2.0 lb/A	1	NS	NA	See "Peppermint."
Broadcast application Dormant Ground equipment	2 lb/gal EC [707-243] [SD960007]	2.0 lb/A	1	NS	NA	See "Peppermint."
Broadcast or band application Dormant Ground equipment	1.6 lb/gal EC [CA930014] [NV930002] [SD940001] 2 lb/gal EC [MT960003] [ND980001]	2.0 lb/A	NS	NS	NA	See "Peppermint."

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Spearmint (continued)						
Broadcast application Preemergence (dormant) Ground equipment	1.6 lb/gal EC [IN840003] [WI950001] 2 lb/gal EC [IN960004] [MI970002] [WI960009]	1.5 lb/A	NS	NS	NA	See "Peppermint."
Stone fruits (including apricot, cherry, nectarine, peach, plum, and prune)						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Taro						
Broadcast or band application Preemergence (within one week after transplanting) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	1.0 lb/A (all uses)	6 (months)	Use limited to HI. Applications may be made in a minimum of 15 gal of water/A.
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.25 lb/A	NS	1.0 lb/A (all uses) 0.5 lb/A (multiple post-direct applications) 0.5 lb/A (preemergent uses)	6 (months)	Use limited to dryland taro grown in HI. Applications may be made in a minimum of 20 gal of water/A.
Tree nuts (including almond, beech nut, Brazil nut, butternut, cashew, chestnut, chinquapin, filbert, hickory nut, macadamia nut, pecan, pistachio, and walnut)						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued; footnotes follow)

Table A (*continued*).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations [1]
Walnuts (See also "Tree nuts")						
Directed spray application Nondormant Ground equipment	1.6 lb/gal EC [CA890012] 2 lb/gal EC [CA960020]	2.0 lb/A	NS	2.0 lb/A (nondormant season)	7	Use limited to CA. Application may be made in a minimum of 20 gal of water/A (minimum of 10 gal/A for certain tank mix applications). Application may be made alone or as a tank mix with other herbicides.
Chemigation Nondormant Flood (basin) irrigation, low-volume sprinkler (microsprinkler) or drip trickle irrigation	2 lb/gal EC [CA960020]	2.0 lb/A	NS	2.0 lb/A (nondormant season)	7	Use limited to CA.

[1] A restricted entry interval (REI) of 24 hours has been established for the 1.6 and 2 lb/gal EC formulations (EPA Reg. Nos. 707-174 and 707-243, respectively). For fallow land uses, specific minimum treatment to planting intervals apply for direct-seeded and transplanted crops and are specified on the labels. These intervals must be amended as specified in endnote 2 of Table B.

Table B. Residue Chemistry Science Assessments for Reregistration of Oxyfluorfen.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
860.1200: Directions for Use	N/A = Not Applicable	Yes [2]	See Table A
860.1300: Plant Metabolism	N/A	No	**00160143,** 42865001 [3], 42873301 [3], 42913201 [3], **92136027, 92136101,** 92136114 [3], **92136121**
860.1300: Livestock Metabolism	N/A	No	42634701 [4], 42670601 [5], 43317701 [6]
860.1340: Residue Analytical Methods			
- Plant commodities	N/A	No [7]	**00149622, 40223201, 92136028, 92136029, 92136065**, 44400202, 44400203
- Animal commodities	N/A	No [8]	**00135077,** 43307502 [6], 43307503 [6], 43346401 [6], **92136030, 9213606**60, 44400204, 44407801, 44506601
860.1360: Multiresidue Methods	N/A	No	
860.1380: Storage Stability	N/A	No	43424201 [9], 43424202 [9], 43813201 [10], 43859801 [11]
860.1500: Magnitude of the Residue in Plants			
Root and Tuber Vegetables Group			
- Horseradish	0.05 [§180.381 (a)]	No	43973701 [12]
- Taro corm	0.05, taro corms and leaves [§180.381 (c)]	No	40940301 [13]

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
Leaves of Root and Tuber Vegetables Group			
- Taro foliage	0.05, taro corms and leaves [§180.381 (c)]	No	40940301 [13]
Bulb Vegetables Group			
- Garlic	None established	No [14]	
- Onions, dry bulb	0.05 [§180.381 (a)]	No	**00126583,** 43965501 [15], **92136049, 92136083**
Brassica Leafy Vegetables Group			
- Broccoli	0.05 [§180.381 (a)]	No [16]	**00148291, 40007203, 92136034, 92136070**
- Cabbage	0.05 [§180.381 (a)]	No	**00148291, 40007201,** 43986301 [17], **92136035, 92136071**
- Cauliflower	0.05 [§180.381 (a)]	No	**00148291, 40007202,** 43986302 [17], **92136036, 92136072**
Legume Vegetables (Succulent or Dried) Group			
- Chickpea (garbanzo beans)	0.05 [§180.381 (c)]	No	41622701 [18]
- Soybean seed and aspirated grain fractions	0.05, soybeans [§180.381 (a)]	No	**00125632, 00136873, 92136053, 92136086**
Foliage of Legume Vegetables Group			
- Soybean forage and hay	None established	Yes [19]	
Pome Fruits Group	0.05 [§180.381 (a)]	No	**00079475, 00141092, 40223206,** 43794001 [20], 44575901 [21], **92136050, 92136051, 92136084**

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
Stone Fruits Group	0.05 [§180.381 (a)]	No	**00036704, 00036705, 00036708, 00079475, 00110745, 00146340,** 43794008 [20], 44025401 [22], **92136054, 92136087**
Berries Group			
- Blackberries	0.05 [§180.381 (c)]	No	43424201 [9]
- Raspberries	0.05 [§180.381 (c)]	No	43424202 [9], 43424203 [9]
Tree Nuts Group	0.1, almond hulls [§180.381 (a)]; 0.05, tree nuts group, except almond hulls [§180.381 (a)]	No	**00036707, 00071290, 00071291, 00071292, 00071293, 00110745, 00141093, 40223206, 92136055, 92136088**
- Pistachios	0.05, pistachios [§180.381 (a)]	No	**00071290, 00071291, 00071292, 00071293, 92136056, 92136089**
Cereal Grains Group			
- Corn, field, grain and aspirated grain fractions	0.05, corn, grain [§180.381 (a)]	No	**00135077,** 43944801 [23], **92136038, 92136074**
Forage, Fodder, Hay, and Straw of Cereal Grains Group			
- Corn, field, forage and fodder	None established	No [24]	**00135077, 92136038, 92136074**
Miscellaneous Commodities			
- Artichokes	0.05 [§180.381 (a)]	No	**00145973,** 43794007[20], **92136031, 92136067**

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Avocados	0.05 [§180.381 (a)]	No	**00145972, 40223202,** 43794002 [20], **92136032, 92136068**
- Bananas	0.05 (bananas, including plantain) [§180.381 (a)]	Yes [25]	**00102529, 92136033, 92136069**
- Cacao beans	0.05, cocoa beans [§180.381 (a)]	Yes [26]	PP#0E3898 [27]
- Coffee	0.05 [§180.381 (a)]	No	**00102529, 92136037, 92136073**
- Cotton, seed, and gin byproducts	0.05, cottonseed [§180.381 (a)]	Yes [28]	**00071290, 00071291, 00071292, 00071293, 00110747, 92136039, 92136040, 92136075**
- Dates	0.05 [§180.381 (a)]	No	**00145972, 40223205, 92136041, 92136076**
- Fallow Land	None established	No [29]	40567001 [30]
- Feijoa	0.05 [§180.381 (a)]	No	PP#9E3779
- Figs	0.05 [§180.381 (a)]	No	**00079475,** 43794003 [20], **92136042, 92136077**
- Grapes	0.05 [§180.381 (a)]	No	**00036703, 00110745, 00146340, 92136043, 92136078**, 44385401 [31], 44385402 [31]
- Guavas	0.05 [§180.381 (c)]	No	**00158014, 92136044, 92136079**

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Kiwifruits	0.05 [§180.381 (a)]	No	**00145972, 40223203,** 43794005 [20], **92136045, 92136080**
- Mint, tops	0.1, mint hay (peppermint and spearmint) [§180.381 (a)]	No	**00071290, 00071291, 00071292, 00071293, 92136046, 92136047, 92136081**
- Olives	0.05 [§180.381 (a)]	No	**00145972, 40223204,** 43794006 [20], **92136048, 92136082**
- Papayas	0.05 [§180.381 (c)]	No	40783201 [32]
- Persimmons	0.05 [§180.381 (a)]	No	PP#9E3718 [33]
- Pomegranates	0.05 [§180.381 (a)]	No	**00145972,** 43794004 [20], **92136052, 92136085**
- Strawberries	0.05 [§180.381 (b)]	No	IR-4 Project PR-3443; no MRID No. [34]
860.1520: Magnitude of the Residues in Processed Food/Feed			
- Apples	--	No	**00141092, 92136051**
- Coffee	--	No	44172301 [35]
- Corn, field, grain	--	No	43944801 [23]
- Cottonseed	--	No	**00071290, 00071291, 00071292, 00071293, 00110747,** 92136040 [36], **92136075**

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Figs	--	No	
- Grapes	--	No	
- Mint	–	No	**00071290, 00071291, 00071292, 00071293**, 92136046 [36], **92136047**
- Olives	--	No	
- Plums	--	No	
- Soybeans	--	No	43764901 [37]
860.1480: Magnitude of the Residue in Meat, Milk, Poultry, and Eggs			
- Milk and the Fat, Meat, and Meat Byproducts of Cattle, Goats, Hogs, Horses, and Sheep	0.05 (milk and the fat, meat, and mbyp of cattle, goat, hogs, horses, and sheep) [§180.381 (a)]	No	43152201 [38]
- Eggs and the Fat, Meat, and Meat Byproducts of Poultry	0.05 (eggs and the fat, meat, and mbyp of poultry) [§180.381 (a)]	No	43152202 [38]
860.1400: Nature and Magnitude of the Residue in Potable Water	N/A	N/A	
860.1400: Nature and Magnitude of the Residue in Fish	N/A	N/A	
860.1400: Nature and Magnitude of the Residue in Irrigated Crops	N/A	N/A	
860.1460: Magnitude of the Residue in Food-Handling Establishments	N/A	N/A	

(continued; footnotes follow)

Table B *(continued)*.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
860.1850: Rotational Crops (Confined)	N/A	No [39]	40567001 [30]
860.1900: Rotational Crops (Field)	N/A	No	

1. **Bolded** references were evaluated in the Oxyfluorfen Phase IV Review by S. Funk dated 03/22/91; all other references were reviewed as noted.

2. The product labels for the 1.6 lb/gal EC (EPA Reg. No. 707-174) and 2 lb/gal EC (EPA Reg. Nos. 707-145 and 707-243) formulations of oxyfluorfen should be amended in order to reflect: (i) the appropriate minimum treatment to planting intervals to support uses on fallow beds, and (ii) agreement between portions of the label(s) dealing with rotational crop plantback restrictions and minimum treatment to planting intervals for fallow bed uses.

   For fallow beds, these amendments are required:
   - For raw agricultural commodities (RACs) listed as transplanted crops under the fallow bed uses portion of the label, which do not have tolerances for oxyfluorfen, the registrant may either remove them or conduct residue field trials for them in accordance with "OPPTS Test Guidelines 860.1500". Once the residue data are submitted a tolerance can be established for these RACs. They are: celery, pepper, and tomato. The Agency considers any treatment of soil with oxyfluorfen 0 to 30 days prior to transplanting crops (seedlings) a direct pre-emergence use, and the use must have a tolerance. Although citrus is listed as a transplanted crop on the label for which there is no tolerance, citrus uses are exempted because the use is for non-bearing trees. Detectable residues in citrus fruits are not expected from this use.

   For label amendments required for rotational crops, see Endnote 39.

3. CB Nos. 12522, 13212, 12513, and 13338; DP Barcodes D194785, D199266, D194789, and D200012; 4/8/94; S. Knizner.

4. CB No. 11303, DP Barcode D187615, 6/10/93, S. Knizner.

5. CB No. 11526, DP Barcode D188906, 6/16/93, S. Knizner.

6. CB Nos. 14321 and 14323, DP Barcode D207134, 11/15/94, S. Knizner.

7. In conjunction with a pending peanut petition (PP#3F4229/FAP#3H5674), the registrant has proposed a new GC/ECD method (Method TR 34-94-150, renamed as Method TR-34-95-111) including a confirmatory GC/MS method for the enforcement of oxyfluorfen tolerances on plant commodities. Method TR 34-95-111 was adequately validated by the registrant using a wide array of plant matrices and by an independent laboratory. The method will be forwarded to ACB for a petition method validation trial to ensure that the procedures are appropriate for tolerance enforcement.

8. In conjunction with PP#3F4229/FAP#3H5674, the registrant has proposed a GC/ECD method (Method TR 34-95-110) including a confirmatory GC/MS method for the enforcement of oxyfluorfen tolerances on animal commodities. Method TR 34-95-110 was adequately validated by the registrant using a variety of animal matrices and by an independent laboratory. The method was also successfully

radiovalidated using aged samples from the hen and goat metabolism studies. HED will forward Method TR 34-95-110 to ACB for a petition method validation trial.

9. CB No. 14692, DP Barcode D209192, 2/17/95, G. Kramer.

10. CB No. 16436, DP Barcode D220695, 1/2/96, S. Knizner.

11. CB No. 17259, DP Barcode D221585, 7/2/96, C. Eiden.

12. CB No. 17121, DP Barcode D225110, 5/8/96, C. Eiden.

13. PP#9E3716; CB No. 4947, DP Barcode None, 5/4/89, M. Nelson.

14. Registered use patterns for garlic are supported by adequate residue data for dry bulb onion (MRID 43965501). As per 40 CFR 180.1 a separate tolerance for garlic is not needed because the established tolerance for dry bulb onions will apply to garlic.

15. CB No. 17106, DP Barcode D224847, 5/8/96, C. Eiden.

16. The available Craven replacement residue data for cabbage and cauliflower will be translated to broccoli.

17. CB No. 17194, DP Barcode D225680, 6/18/96, C. Eiden.

18. PP#0E3908; CB No. 7096, DP Barcode None, 3/21/91, M. Nelson.

19. Label restrictions on the feeding of treated soybean forage and hay are now an acceptable alternative to generating residue field data on these feed items. A recent re-examination of oxyfluorfen end-use products with use claims on soybeans reveals that feeding and grazing restrictions on the forage and hay of soybeans are not declared on the labels. Therefore, for purposes of reregistration, the registrant may impose label restrictions on the feeding and grazing by livestock animals on soybean forage and hay. Alternatively, the registrant may elect to submit residue data and propose tolerances for these commodities. For further guidance on the latter option, the registrant is referred to OPPTS Test Guidelines 860.1500.

20. CB No. 16313, DP Barcode D219897, 1/2/96, S. Knizner.

21. DP Barcodes D248000, J. Morales

22. CB No. 17370, DP Barcode D227400, 08/23/96, C. Eiden.

23. CB No. 17049, DP Barcode D224356, 5/8/96, C. Eiden.

24. Because the registered use of oxyfluorfen on field corn is limited to the states of NC and SC in conjunction with a USDA program to eradicate "witchweed" (*Striga asiatica*) and because the forage and fodder from treated crops are not utilized to avoid the spread of this weed, residue chemistry data requirements for field corn fodder and forage should not be imposed (CB No. 9024, DP Barcode D171996, 4/16/92, F. Fort).

Table B *(continued)*.

25. Translated labels from major Central American banana-producing countries must be submitted. As previously requested (CB No. 9024, DP Barcode D171996, 4/16/92, F. Fort), additional studies are also needed to reflect the maximum seasonal rate at the minimum PHI. Two applications of the 2 lb/gal EC formulation must be applied at 90-day intervals at the maximum label rate of 0.85 lb ai/A. A 3-day PHI must be stipulated. These studies should be conducted in Puerto Rico and two representative Central American countries.

26. Data are required depicting residues of oxyfluorfen in/on cacao beans following applications of an appropriate EC formulation according to the maximum registered use patterns. The number of field trials and geographic locations of trial sites should be in compliance with the current guidance.

27. PP#0E3898; CB No. 7003, DP Barcode None, 9/25/90, F. Griffith.

28. No additional data are required for cottonseed. However, the Agency currently recognizes cotton gin byproducts (commonly called gin trash which include the plant residues from ginning cotton consisting of burrs, leaves, stems, lint, immature seeds, and sand and/or dirt) as a RAC (Table 1, OPPTS 860.1000). Data depicting the magnitude of oxyfluorfen residues of concern in/on cotton gin byproducts following application(s) of a representative formulation according to the maximum registered use patterns are required. Cotton must be harvested by commercial equipment (stripper and mechanical picker) to provide an adequate representation of plant residue for the ginning process. A minimum of three field trials for each type of harvesting (stripper and mechanical picker) are required, for a total of six field trials. An appropriate tolerance for this RAC should be proposed once acceptable data have been submitted and evaluated.

29. Pending required label amendments (see Endnote 2), the reregistration requirements for magnitude of the residue in fallow beds are fulfilled.

30. CB No. 17186, DP Barcode D225497, 5/29/96, C. Eiden.

31. DP Barcode D239556, 10/28/97, J. Abbotts.

32. PP#8E3677; CB No. 4288, DP Barcode None, 9/22/88, M. Nelson.

33. PP#9E3718; CB No. 4837, DP Barcode None, 4/14/89, M. Nelson.

34. DP Barcode D203459, 5/23/94, M. Nelson and DP Barcode D287590, 11/5/96, G. Herndon et.al.

35. DP Barcode D233855, C. Swartz.

36. CB No. 16376, DP Barcode D220411, 11/1/95, S. Knizner.

37. CB No. 16374, DP Barcode D220316, 10/25/95, S. Knizner.

38. CB No. 13395, DP Barcode D200532, 8/19/94, S. Knizner.

39. Discrepancies exist on the current label(s) regarding plantback restrictions for rotational crops and minimum treatment to planting intervals for direct-seeded crops. The registrant must amend the product labels so that plantback intervals agree with minimum treatment to planting intervals for fallow bed uses. (See Endnote 2). Specifically, some of the minimum treatment to planting intervals listed under fallow bed uses for direct-seeded crops are greater than the 60-day plantback restriction listed for all direct-seeded rotational crops. The portion of the label(s) dealing with transplanted rotational crops

must be **DELETED** altogether. The Agency considers any use of oxyfluorfen to soil 0 to 30 days prior to transplanting of crops a direct pre-emergence treatment, and tolerances are required for any crop receiving such treatment. Pending required label amendments described here and in Endnote 2, the reregistration requirements for confined rotational crops (860.1850) are fully satisfied.

TOLERANCE REASSESSMENT SUMMARY

The tolerance expression for oxyfluorfen has been amended (60 FR 62330, 12/6/95) to delete the metabolites of oxyfluorfen containing the diphenyl ether linkage. The established tolerances for plant and animal commodities [40 CFR §180.381 (a), (b), and (c)] are now expressed in terms of oxyfluorfen *per se* [2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene].

Permanent tolerances are established for oxyfluorfen residues in/on several raw agricultural plant commodities and animal commodities under 40 CFR §180.381(a). A time-limited tolerance, with an expiration date of 4/15/01, has been established for oxyfluorfen residues in/on strawberries under 40 CFR §180.381(b) (as amended in 64 FR 18372, 4/14/99). Tolerances with regional registration have been established for oxyfluorfen residues in/on blackberry, garbanzo beans, guava, papaya, raspberry, and taro (corms and leaves) under 40 CFR §180.381(c).

Tolerances for cottonseed oil, mint oil (peppermint and spearmint), and soybean oil previously established under 40 CFR §185.4600 have been revoked. The decision to revoke these tolerances was made following re-evaluation of the available processing studies; the Agency has determined that these tolerances are not needed because the reassessed RAC tolerance should adequately cover any oxyfluorfen residues that may result during processing. A request for public comment concerning the revocation of these food additive tolerances was issued (OPP-300373; FRL-4920-3, 12/14/94).

A summary of oxyfluorfen tolerance reassessments is presented in Table C. Table C includes our recommendations as to how certain commodity definitions must be corrected.

Tolerances Listed Under 40 CFR §180.381 (a)

Adequate data are available to reassess the established tolerances for the following commodities, **as defined**: almond hulls; artichokes; avocados; broccoli; cabbage; cauliflower; cattle, fat; cattle, mbyp; cattle, meat; coffee; corn, grain; cottonseed; dates; eggs; feijoa; figs; goat, fat; goat, mbyp; goat, meat; grapes; hogs, fat; hogs, mbyp; hogs, meat; horseradish; horses, fat; horses, mbyp; horses, meat; kiwifruit; olives; onions (dry bulb); milk; mint hay (peppermint and spearmint); persimmons; pistachios; pome fruits group; pomegranates; poultry, fat; poultry, mbyp; poultry, meat; sheep, fat; sheep, mbyp; sheep, meat; soybeans; stone fruits group; and tree nuts group (except almond hulls).

The majority of Craven-replacement data indicate that oxyfluorfen residues in/on most plant commodities were below the LOQ (<0.01 ppm) of the data-collection method following application of oxyfluorfen formulation(s) according to maximum

registered uses. At this time, HED is reassessing most plant commodity tolerances at the established level of 0.05 ppm until an adequate single analyte enforcement method becomes available. The registrant is proposing a new GC/ECD enforcement method in conjunction with a pending peanut petition (PP#3F4229/FAP#3H5674).

Additional data are required for bananas and cacao beans before the established tolerances can be reassessed. The reassessed tolerance for broccoli is based on residue data translated from cabbage and cauliflower. As per 40 CFR §180.1 a separate tolerance for garlic is not needed because the established tolerance for dry bulb onions will apply to garlic.

Tolerances for field corn fodder and forage are not warranted because oxyfluorfen's registered use on field corn is limited to the states of NC and SC in conjunction with a USDA program to eradicate "witchweed" (*Striga asiatica*); the treated forage and fodder of field corn are not fed to livestock to avoid the spread of the weed.

With respect to animal commodities, the established oxyfluorfen tolerances for milk, fat, meat, and meat by-products of cattle, goats, hogs, horses, and sheep should be lowered from 0.05 to 0.01 ppm based on the reviewed cattle feeding study. Similarly, adjustments in the tolerance levels of the following poultry commodities are required based on the results of the poultry feeding study: eggs (from 0.05 to 0.03 ppm); meat and meat by-products (from 0.05 to 0.01 ppm); and fat (from 0.05 to 0.2 ppm).

Tolerances To Be Proposed Under 40 CFR §180.381 (a)

An oxyfluorfen tolerance for cotton gin byproducts must be proposed once adequate field residue data, reflecting the maximum registered use pattern, have been submitted and evaluated. The registrant may impose label restrictions on the feeding of oxyfluorfen-treated soybean forage and hay in lieu of submitting field residue data and proposing tolerances for these soybean commodities.

Tolerances Listed Under 40 CFR §180.381 (b)

Adequate data residue data are available to support the time-limited tolerance (to expire 4/15/01) for strawberries under a Section 18 emergency exemption.

Tolerances Listed Under 40 CFR §180.381 (c)

Adequate data are available to reassess the established tolerances with regional registrations for the following commodities, **as defined**: blackberry, garbanzo beans, guava, papaya, raspberry, and taro (corms and leaves).

Tolerances Needed Under 40 CFR §180.381 (c)

Tolerances with regional registration for grass forage, grass hay, and grass seed screenings at 0.05 ppm each should be established under this section.

Pending Tolerance Petitions

PP#3F4229/FAP#3H5674: Rohm and Haas Company submitted this petition for the establishment of tolerances for residues oxyfluorfen *per se* in/on peanut nutmeat and hay at 0.05 ppm each. Following reviews of submitted residue chemistry data, the Agency (DP Barcodes D218956 and D218957, 5/10/96, W. Cutchin and DP Barcode D228055, 8/20/96, W. Cutchin) recommended for the establishment of time-limited oxyfluorfen tolerances on the subject peanut commodities. For the establishment of permanent tolerances, the latter review specified additional residue chemistry data that must be fulfilled; these data requirements include: (i) PAM Analytical Method: clarification of performing laboratory and an ILV; (ii) Animal Analytical Method: additional data for meat, milk, poultry, and eggs methods and ILV; (iii) Magnitude of the Residue Data: fortification or bridging data in support of previously submitted peanut residue data and clarification of performing laboratory; and (iv) plant or peanut storage stability data (CB No. 17391, DP Barcode D228055, 8/20/96, W. Cutchin). The registrant has requested not to include peanuts in the dietary risk assessment.

PP#3E4175: The Interregional Research Project No. 4 (IR-4) and the Agricultural Experiment Station of Oregon previously submitted this petition for the establishment of tolerances for residues oxyfluorfen and its metabolites containing the diphenyl ether linkage in/on grass forage, grass hay, and grass seed screenings at 0.05 ppm each. These tolerances were proposed in support of regional registration for oxyfluorfen use in the states of OR and WA. The petition was rejected following a review (CB No. 11025, DP Barcode D185392, 5/19/93, J. Morales) of submitted residue chemistry data. IR-4 has recently submitted additional residue data in support of this petition, and these data are currently under review (DP Barcode D275124, J. Morales). The preliminary conclusions of this review has been incorporated into this risk assessment. This tolerance will be reassessed again pending the outcome of the full petition by HED.

PP#0F3856: Rohm and Haas Company submitted this petition for the establishment of tolerances for residues oxyfluorfen and its metabolites containing the diphenyl ether linkage in/on citrus fruits crop group at 0.05 ppm. The petition is currently on reject status.

Strawberries: IR-4 is in the process of submitting a Section 3 request for establishment of permanent tolerances in strawberries. This tolerance will be reassessed again pending the outcome of the full petition review by HED.

Table C. Tolerance Reassessment Summary for Oxyfluorfen.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/ *[Correct Commodity Definition]*
Tolerances Listed Under 40 CFR §180.381 (a):			
Almond hulls	0.1	0.1	*[Almond, hulls]*
Artichokes	0.05	0.05	*[Artichoke, globe]*
Avocados	0.05	0.05	*[Avocado]*
Bananas (including plantain)	0.05	TBD [1]	*[Banana (including plantain)]*
Broccoli	0.05	0.05	The registrant may wish to propose a crop group tolerance of 0.05 ppm for Head and stem Brassica subgroup.
Cabbage	0.05	0.05	
Cauliflower	0.05	0.05	
Cattle, fat	0.05	0.01	
Cattle, mbyp	0.05	0.01	
Cattle, meat	0.05	0.01	
Cocoa beans	0.05	TBD [1]	*[Cacao bean]*
Coffee	0.05	0.05	*[Coffee bean, green]*
Corn, grain	0.05	0.05	*[Corn, field, grain]*
Cottonseed	0.05	0.05	*[Cotton, undelinted seed]*
Dates	0.05	0.05	*[Date]*
Eggs	0.05	0.03	
Feijoa	0.05	0.05	*[Feijoa (pineapple guava)]*
Figs	0.05	0.05	*[Fig]*
Garlic	--	0.05	
Goat, fat	0.05	0.01	
Goat, mbyp	0.05	0.01	
Goat, meat	0.05	0.01	
Grapes	0.05	0.05	*[Grape]*
Hogs, fat	0.05	0.01	
Hogs, mbyp	0.05	0.01	
Hogs, meat	0.05	0.01	
Horseradish	0.05	0.05	
Horses, fat	0.05	0.01	
Horses, mbyp	0.05	0.01	
Horses, meat	0.05	0.01	
Kiwifruit	0.05	0.05	
Olives	0.05	0.05	*[Olive]*
Onions (dry bulb)	0.05	0.05	*[Onion, dry bulb (only)]*
Milk	0.05	0.01	

(*continued; footnotes follow*)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/ *[Correct Commodity Definition]*
Mint hay (peppermint and spearmint)	0.1	0.05	Separate tolerances should be established, each at 0.05 ppm for: *[Peppermint, tops]* *[Spearmint, tops]*
Persimmons	0.05	0.05	*[Persimmon]*
Pistachios	0.05	0.05	*[Pistachio]*
Pome fruits group	0.05	0.05	*[Fruit, Pome, Group]*
Pomegranates	0.05	0.05	*[Pomegranate]*
Poultry, fat	0.05	0.2	
Poultry, mbyp	0.05	0.01	
Poultry, meat	0.05	0.01	
Sheep, fat	0.05	0.01	
Sheep, mbyp	0.05	0.01	
Sheep, meat	0.05	0.01	
Soybeans	0.05	0.05	*[Soybean]*
Stone fruits group	0.05	0.05	*[Fruits, Stone, Group]*
Tree nuts group (except almond hulls)	0.05	0.05	*[Nuts, Tree, Group]*
Tolerances To Be Proposed Under 40 CFR §180.381 (a):			
Cotton, gin byproducts	None	TBD [1]	New RAC according to Table 1 (OPPTS 860.1000).
Soybean forage	None	TBD [1]	A feeding restriction may be established in lieu of proposing tolerances.
Soybean hay	None	TBD [1]	
Tolerances Listed Under 40 CFR §180.381 (b):			
Strawberries	0.05	0.05	*[Strawberry]*
Tolerances Listed Under 40 CFR §180.381 (c):			
Blackberry	0.05	0.05	Recently established under PP#5E04429 (60 FR 62330, 12/6/95)
Garbanzo beans	0.05	0.05	*[Chickpea (bean, garbanzo)]*
Guava	0.05	0.05	
Papaya	0.05	0.05	
Raspberry	0.05	0.05	Recently established under PP#5E04429 (60 FR 62330, 12/6/95)

(*continued; footnotes follow*)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/ *[Correct Commodity Definition]*
Taro (corms and leaves)	0.05	0.05	Separate tolerances should be established, each at 0.05 ppm for: *[Taro, corm]*, *[Taro, foliage]*
Tolerances To Be Proposed Under 40 CFR §180.381 (c)			
Grass Forage, Grass Hay, and Grass Seed Screenings	None	0.05	Separate tolerances should be established, each at 0.05 ppm for grass forage, grass hay and grass seed screenings

[1] TBD = To be determined. Reassessment of tolerance(s) cannot be made at this time because residue data are required.

CODEX HARMONIZATION

No Codex MRLs have been established for oxyfluorfen; therefore, issues of compatibility between Codex MRLs and U.S. tolerances do not exist.

AGENCY MEMORANDA RELEVANT TO REREGISTRATION

CB No.: 4288
DP Barcode: None
Subject: PP#8E3677 - Petition Review for Establishment of Tolerance(s) for Papaya.
From: M. Nelson
To: H. Jamerson
Dated: 9/22/88
MRID(s): 40783201

CB No.: 4837
DP Barcode: None
Subject: PP#9E3718 - Petition Review for Establishment of Tolerance(s) for Persimmons.
From: M. Nelson
To: H. Jamerson
Dated: 4/14/89
MRID(s): None

CB No.: 4947
DP Barcode: None
Subject: PP#9E3716 - Petition Review for Establishment of Tolerance(s) for Taro (Corm) and Taro (Leaves).
From: M. Nelson
To: H. Jamerson
Dated: 5/4/89
MRID(s): 40940301

CB No.: None
DP Barcode: None
Subject: PP#0F3856 - Oxyfluorfen (Goal) on Citrus Fruits Crop Group. Petition Method Validation (PMV) Request.
From: F. Griffith
To: D. Marlow
Dated: 9/20/90
MRID(s): 41578401

CB No.: 7003
DP Barcode: None
Subject: PP#0E3898 - Petition Review for Establishment of Tolerance(s) for Cocoa Bean.
From: M. Nelson
To: H. Jamerson
Dated: 3/25/90
MRID(s): None

CB No.: 7096
DP Barcode: None
Subject: PP#0E3908 - Petition Review for Establishment of Tolerance(s) for Garbanzo Beans.
From: M. Nelson
To: H. Jamerson and A. Beard
Dated: 3/21/91
MRID(s): 41622701

CB No.: None
Subject: Oxyfluorfen. Reregistration List B. Phase IV Review for Rohm and Haas.
From: S. Funk
To: V. Dietrich
Dated: 3/22/91
MRID(s): None

CB No.: 8548
DP Barcode: D167778
Subject: Impact of Craven Laboratories Inc. Analytical Data on Reregistrations.
From: S. Funk
To: J. Miller

Dated: 10/10/91
MRID(s): None

CB No.: 9024
DP Barcode: D171996
Subject: Oxyfluorfen. Rohm and Haas Company 90-Day Response to Phase 4 Review.
From: F. Fort
To: B. Sidwell and M. Wilhite
Dated: 4/16/92
MRID(s): None

CB No.: 9913
DP Barcode: D173513
Subject: Reregistration of Oxyfluorfen: Time Extension Request.
From: C. Olinger
To: M. Wilhite and B. Sidwell
Dated: 6/15/92
MRID(s): None

CB No.: None
DP Barcode: None
Subject: Oxyfluorfen. Reevaluation of the Impact of Craven Laboratories Inc. Analytical Data on Reregistrations.
From: S. Funk
To: P. Bagley and L. Rossi
Dated: 4/26/93
MRID(s): None

CB No.: 11025
DP Barcode: D185392
Subject: Oxyfluorfen in/on Grass Forage, Hay and Seed Screenings. Evaluation of Residue Data and Analytical Methodology.
From: J. Morales
To: H. Jamerson
Dated: 5/19/93
MRID(s): 425635-00 and -01

CB No.: 11303
DP Barcode: D187615
Subject: Oxyfluorfen. Guideline 171-4(b): Nature of the Residue in Poultry.
From: S. Knizner
To: B. Sidwell
Dated: 6/10/93
MRID(s): 42634701

CB No.: 11526
DP Barcode: D188906
Subject: Oxyfluorfen. Guideline 171-4(b): Nature of the Residue in Ruminants.
From: S. Knizner
To: B. Sidwell
Dated: 6/16/93
MRID(s): 42670601

CB No.: 12194
DP Barcode: D193009
Subject: Oxyfluorfen. Protocol for Processing Study GLN 171-4(l).
From: S. Funk
To: B. Sidwell and M. Wilhite
Dated: 8/31/93
MRID(s): None

CB No.: 12933
DP Barcode: D197682
Subject: Oxyfluorfen (GOAL®) Registrant Response to 09/21/93 DCI for Replacement of Craven Residue Chemistry Data.
From: S. Funk
To: B. Sidwell
Dated: 12/21/93
MRID(s): None

CB Nos.: 12522, 13212, 12513, and 13338
DP Barcode: D194785, D199266, D194789, and D200012
Subject: Oxyfluorfen. Nature of the Residue in Tomatoes, Onions, Stone Fruit, and Alfalfa.
From: S. Knizner
To: M. Wilhite
Dated: 4/8/94
MRID(s): 42865001, 42913201, 42873301, and 92136114

CB Nos.: 12124, 12860, and 12861
DP Barcodes: D192408, D196984, and D197110
Subject: PP#3F04229/FAP#3H5674 Oxyfluorfen in or on Peanuts. Evaluation of Residue Data and Analytical Methods.
From: W. Wassell
To: J. Miller
Dated: 5/11/94
MRID(s): 42793301

CB No.: 13705
DP Barcode: D203459
Subject: Section 18 Exemption for Use of Oxyfluorfen on Strawberries
From: M. Nelson
To: L. Fried
Dated: 5/23/94
MRID(s): None

CB No.: 13395
DP Barcode: D200532
Subject: Oxyfluorfen. Livestock Feeding Study - Meat/Milk/Poultry/Eggs Magnitude of the Residue.
From: S. Knizner
To: B. Sidwell
Dated: 8/19/94
MRID(s): 43152201 and 43152202

CB Nos.: 14321 and 14323
DP Barcode: D207134
Subject: Oxyfluorfen. Analytical Method for Meat/Milk/Eggs and Response to CBRS Review of Ruminant Metabolism Study.
From: S. Knizner
To: M. Wilhite
Dated: 11/15/94
MRID(s): 43307502, 43307503, 43317701, and 43346401

CB No.: 14692
DP Barcode: D209192
Subject: PP#5E04429. Oxyfluorfen In/On Blackberries and Raspberries in WA and OR. Evaluation of Residue Data and Analytical Methods.
From: G. Kramer
To: H. Jamerson and J. Smith
Dated: 2/17/95
MRID(s): 43424201, 43424202, 43424203

CB No.: 15229
DP Barcode: D212793
Subject: PP#5E04429. Oxyfluorfen In/On Blackberries and Raspberries in WA and OR. Amendment of 2/24/95.
From: G. Kramer
To: H. Jamerson
Dated: 3/15/95
MRID(s): None

CB No.: 16203
DP Barcode: D219270
Subject: CA950007, Section 24 (c) - Non-Dormant Use of Oxyfluorfen on Pistachios in California.
From: W. Cutchin
To: J. Miller
Dated: 9/28/95
MRID(s): None

CB No.: 16374
DP Barcode: D220316
Subject: Oxyfluorfen. Soybean Processing Study.
From: S. Knizner
To: M. Wilhite
Dated: 10/25/95
MRID(s): 43764901

CB No.: 16376
DP Barcode: D220411
Subject: Oxyfluorfen. Reassessment of Section 409 Food Additive Tolerances for Oils of Cottonseed, Peppermint, Spearmint, and Soybeans.
From: S. Knizner
To: M. Wilhite
Dated: 11/1/95
MRID(s): None

CB No.: 16622
DP Barcode: D221731
Subject: Oxyfluorfen. Questions Regarding CBRS Review of Analytical Method, Rohm and Haas Company Letter Dated 12/12/95.
From: S. Knizner
To: M. Wilhite
Dated: 12/19/95
MRID(s): None

CB No.: 16436
DP Barcode: D220695
Subject: Oxyfluorfen. Storage Stability - Meat, Milk, and Eggs.
From: S. Knizner
To: M. Wilhite
Dated: 1/2/96
MRID(s): 43813201

CB No.: 16313
DP Barcode: D219897
Subject: Oxyfluorfen. Magnitude of the residue in Apple, Artichoke, Avocado, Cherry, Fig, Kiwi, Olive and Pomegranate.
From: S. Knizner
To: M. Wilhite
Dated: 1/2/96
MRID(s): 43794001, 43794002, 43794003, 43794004, 43794005, 43794006, 43794007, and 43794008

CB No.: 17049
DP Barcode: D224356
Subject: Oxyfluorfen. Residue Trial & Processing Study for Corn: GLN 171-4 (k & l).
From: C. Eiden
To: P. Deschamp
Dated: 5/8/96
MRID(s): 43944801

CB No.: 17121
DP Barcode: D225110
Subject: Oxyfluorfen. Residue Trial Studies for Horseradish: GLN 171-4 (k).
From: C. Eiden
To: P. Deschamp
Dated: 5/8/96
MRID(s): 43973701

CB No.: 17106
DP Barcode: D224847
Subject: Oxyfluorfen. Residue Trial Studies for Onions: GLN 171-4 (k).
From: C. Eiden
To: P. Deschamp
Dated: 5/8/96
MRID(s): 43965501

CB Nos.: 16179 and 16180
DP Barcodes: D218956 and D218957
Subject: PP#3F4229/FAP#3H5674 Oxyfluorfen in or on Peanuts. Amendment Dated 8/23/95 in Response to CBTS Review. Review of Analytical Method and Residue Data. Rotational Crops Data.
From: W. Cutchin
To: D. McCall
Dated: 5/10/96
MRID(s): 405670-01, 437650-00 and 437568-02 through -05

CB No.: 17186
DP Barcode: D225497
Subject: Oxyfluorfen. Fallow Bed Uses and Rotational Crop Study (165-1).
From: C. Eiden
To: P. Deschamp
Dated: 5/29/96
MRID(s): 40567001

CB No.: 17194
DP Barcode: D225680
Subject: Oxyfluorfen. Residue Trial Studies for Head and Stem Brassica (Crop Subgroup 5A): Cabbage, Cauliflower, and Broccoli GLN 171-4(k).
From: C. Eiden
To: P. Deschamp
Dated: 6/18/96
MRID(s): 43986301 (2 vols.) & -02

CB No.: 17259
DP Barcode: D221585
Subject: Oxyfluorfen. Storage Stability on Various Crops: GLN 171-4(e)
From: C. Eiden
To: P. Deschamp
Dated: 7/2/96
MRID(s): 43859801

CB No.: 17391
DP Barcode: D228055
Subject: PP#3F4229/FAP#3H5674. Oxyfluorfen in or on Peanuts. Amendment Dated 7/2/96 in Response to CBTS Review, Revised Sections B and F.
From: W. Cutchin
To: D. McCall
Dated: 8/20/96
MRID(s): None

CB No.: None
DP Barcode: D230463
Subject: ID#96NH0001 Section 18 Exemption for Use of Oxyfluorfen on Strawberries in the State of New Hampshire.
From: G. Herndon et.al.
To: D. Deegan/R. Forrest
Dated: 11/5/96
MRID(s): None

CB No.: 17370
DP Barcode: D227400
Subject: Oxyfluorfen. Magnitude of the Residue in Peaches (171-4(k)).
From: C. Eiden
To: P. Deschamp
Dated: 8/23/96
MRID(s): 44025401

DP Barcode: D239556
Subject: Oxyfluorfen (111601), Residue Chemistry. Section 24(c) Registration, WA-970024. Application to Growing Grapes, Supplemental.
From: J. Abbotts
To: S. Stanton
Dated: 10/28/97
MRID(s): 44385401 and 44385402

DP Barcode: D236944
Subject: Oxyfluorfen. Section 24 (c) Registration, WA-970024
From: J. Abbots
To: E. Doyle
Dated: 9/11/97
MRID(s): None

DP Barcode: D250145
Subject: Dietary Exposure Analysis for Oxyfluorfen in/on Grass (98OR0033)
From: S. Chun
To: G. Kramer
Dated: 11/2/98
MRID(s): None

DP Barcode: D266651
Subject: Dietary Exposure Analysis for Oxyfluorfen in/on Non-Bell Peppers (00NM0004)
From: J. Rowell
To: G. Kramer
Dated: 6/26/00
MRID(s): None

MASTER RECORD IDENTIFICATION NUMBERS

References Used To Support Reregistration

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